(12)

CONTRACTOR REPORT ARRAD-CR-86001

HAZARDS CLASSIFICATION OF MTSQ FUZE M582A1 IN AMMUNITION BOX

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SAFETY OFFICE

DOVER, NEW JERSEY

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18. SUPPLEMENTARY NOTES

19. KEY WORDS *(Continue on reverse side if necessary and identify by block number)*

MTSQ fuze M582A1
Explosive hazard classification
Single package test
External fire stack test
Non-propagating shipping container

20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

The MTSQ fuze M582A1 in a non-propagating shipping container was tested in accordance with the DoD Explosive Hazard Classification Procedures. In the single package test, there was no detonation of total contents. There was no propagation between fuzes in the container. In the external fire stack test, there was no mass explosion.

Based on interpretation of results, a probable Division (1.4) (DOT Class C) classification was indicated for the fuze in a non-propagating shipping container.

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

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INTRODUCTION

A series of tests were conducted for the U.S. Army Armament, Munitions and Chemical Command, Safety Office, Dover, NJ 07801, to provide data for the hazards classification of Fuze, MTSQ, M582A1, packaged in ammunition box. The testing involved the conduct of three single package tests and a single external fire stack test, which were conducted in accordance with Army TB 700-2 "Department Of Defense Explosives Hazard Classification Procedures", September 1982. The pr· ·edures, details and results of this test series are described in this report.

DISCUSSION

TEST HARDWARE

The test hardware consisted of a total of 64 Fuze MTSQ M582A1 packaged eight (8) to a M2A1 Ammo Box. See Figures 1 to 10 for fuze explosive train drawings and Figure 11 for the Ammo Data Card. Details of the Ammo Box and non-propagation packaging are shown in Figures 12 to 19.

The rear end of each fuze was supported by a heavy wall cardboard tube. This system provided an air space plus approximately 1/2 inch of cardboard material between adjacent boosters.

The booster had a metal casing and was loaded with 23.2 grams Comp A-5 (97% RDX).

SINGLE PACKAGE TESTS

Three ammunition boxes each containing eight fuzes and internal packaging were used in the conduct of three single package tests (1 box with 8 fuzes per test).

Initiation of one of the interior fuzes was accomplished in two ways. In test 221 the booster was removed from the fuze. The fuze was replaced with a wooden mockup which had the same external geometry as the fuze. The booster was initiated by means of a Reynolds Industries RP-87 exploding bridge wire (EBW) detonator, which has an output charge consisting of 47 MG RDX plus a MK9 lead containing 363 MG of CH-6. In tests 222 and 224 the booster was unscrewed from the fuze and the RP-87/MK 9 were placed on their side sandwiched between the fuze and booster. The initiation geometries are depicted in Figure 20.

Each test was conducted with confinement provided on all sides of the ammunition box. The confinement was provided by burying the boxes in soil such that the top was flush with the ground. A hole was dug in the ground and a piece of plywood 5/8 X 12 X 12 inches placed in the bottom of the hole. The box was placed directly on top of the plywood and soil was compacted around the box sides and ends. Top confinement varied. In test 221 a 0.25 X 24 X 36 inch armor plate was placed on top of the ammo box and was covered with a single sand bag. In test 222 the armor plate plus three sandbags were used. In test 224 seven sandbags (no steel plate) were used.

A closed circuit TV system was used to observe each test. After booster initiation the test area was kept clear for 1/2 hour. Following the 1/2 hour waiting period the site was visually inspected and the results documented by note taking and photographs.

In test 221 the armor plate and sandbag were thrown clear of the ammo box and the box itself and fuzes were ejected from the pit. Several of the cardboard packing tubes were observed to smolder for approximately 20 minutes following detonation of the booster. Only the initiated booster fired high order as determined by the large circular hole made in the box bottom. All seven remaining fuzes remained integral. Three of the attached boosters were substantially deformed (crushed in approximately 1/4 inch) on the side facing the initiated booster.

In test 222 the ammo box and several of the fuzes remained in the pit, apparently due to the increased confinement. Only the initiated booster fired high order as determined by the large circular hole made in the box bottom. The other seven fuzes did not initiate. Boosters were crushed and separated from three of these fuzes. Two of the booster cups retained the Comp A-5 explosive while the third was emptied.

In test 224 the ammo box and seven of the fuzes remained in the pit, apparently due to the increased confinement. Only the initiated booster fired high order as determined by the large circular hole made in the box bottom. The other seven fuzes did not initiate. The boosters were crushed and separated from three of these fuzes (similar to test 222).

Selected photographs of the test assembly and post test views are contained in Figures 21 to 27

EXTERNAL FIRE STACK TEST

Five ammunition boxes each containing eight fuzes and internal packaging were used in the conduct of the external fire stack test. The five boxes were banded together using steel strapping. The five box assembly was in turn banded to a steel burn test fixture.

Three insulation board fragment recovery packs, each containing 48 - 1/2 X 48 X 96 inch panels were set up with the 8 ft. dimension vertical and the 4 ft. dimension perpendicular to a nominal fragment line of flight.(See Figure 28)

Combustible material consisting of one inch pine boards (broken up scrap wooden ammunition boxes) was placed so as to completely fill the space under the 50 inch square X 55 1/2 inch high steel burn fixture frame work. Additional boards were placed around and on top of the ammunition boxes. The wood was soaked with 15 gallons of No. 2 fuel oil. The fire was ignited remotely by means of two igniters consisting of an electric match, an iginition mix of black powder and BK NO_3, and a booster mix of M30 propellant.

The test was observed and recorded using a CCTV system. A microphone was placed approximately 50 ft. from the test fixture and was utilized to monitor detonations or deflagrations which provided a substantial audible report. The microphone outputs were recorded on the video tape. The test was conducted in the afternoon and the area was kept clear of personnel until the following morning. Test results were evaluated from the video tape, by inspection of the test site (fuzes, fuze debris and ammunition box debris on the ground) and by recovery of metal fragments from one of the recovery packs. Documentory photographs were obtained. Two of the three fragment recovery packs burned and no fragments were recovered from these packs.

A study of the video tape, with superimposed audio, indicated a total of 16 discrete audible events (detonation or deflagration). After ignition the fire burned for seven minutes before any of the fuzes produced audible cookoff. In the next minute there were eleven discrete audible reports.

At seven minutes there was a loud audible report and explosion from the stack. This was shortly followed by three reports which were audible but of substantially less amplitude (one from the stack and two from the base of the fire). Over the remainder of the minute there were three lower amplitude reports (one from the stack and two from the base of the fire) and three more loud reports (one from the stack and two from the base of the fire). Near the eight minute point there was a very loud report and visually violent explosion which scattered a lot of material. Judging from the violence of this event there was a multiple reaction of boosters. Following this event there was no remaining material atop the burn fixture. There were four additional reports from the base of the fire over the next four minutes (two loud and two lower amplitude). Thirty four minutes after fire ignition another fuze was cooked off (lower amplitude) by a fire produced by burning of one of the insulation board recovery packs.

The day following the test the ground area out to a radius of approximately 300 ft. was searched for debris. Fuze debris and ammunition box pieces were found as far as 265 ft. from the burn fixture. Figure 29 is a map showing the location of some of the principal debris recovered.

Of the 40 fuzes tested, parts of 33 were recovered. Five were recovered with booster attached. The plastic windows over the time delay indicator were melted. An additional 12 were recovered intact less booster (also with melted window). Sixteen fuze internal components were recovered. These had been damaged similar to the ones which fired high order in single stack tests 221, 222 and 224. Also seven booster cups were found with no Comp A-5 load.

A total of eight fragments were recovered from the westerly insulation board recovery pack. The front panel captured five fragments which are apparently all from fuze debris (two aluminum and three steel). The second panel captured three fragments which are also apparently from fuze debris and are all steel. Individual fragment weights are listed in Table I. The recovery pack face represents a solid area of .1107 steradians.

Examination of the steel burn fixture indicates that at least three high order reactions (explosions) occurred within the stack, two of which appeared to be single booster detonations. These explosions both produced substantial localized single dents in the two inch pipe supports. The third explosion produced bowing of two adjacent pipes but no distinct localized dents. This could have been caused by detonation or deflagration of one or more boosters within the center of an ammo box.

Selected photographs of the test setup and post test views are contained in Figures 30 to 37.

RESULTS

SINGLE PACKAGE TESTS

In the three single package tests high order detonation of the initiated booster was achieved but none of the other fuzes in the box reacted either high or low order. In each test all seven fuzes and boosters were recovered. The boosters nearest to the initiated booster were severely crushed and in some cases separated from the fuze body.

EXTERNAL FIRE STACK TEST

Five metal ammo boxes each containing eight M582A1 fuzes were strapped together and exposed to a hot wood/fuel oil fire. A total of 16 discrete explosions were observed. Of these, five emanated from the stack. The remainder came from the base of the fire, apparently resulting from fuzes falling into the fire when the ammunition boxes ruptured.

Two of the explosions within the stack were apparently high order detonations of single boosters, as the noise level was similar to that observed from a single package test. This was also indicated by the effect on the steel burn fixture. Each of these detonations would have caused rupture of an ammo box and dispersion of at least a box full of fuzes.

One of the explosions was substantially more violent both audibly and visually. This was apparently a multiple detonation within a box. Examination of the burn fixture indicated that three substantial explosions occurred (two apparently from single booster detonations). In the third explosion the number of boosters which detonated cannot be determined (could be one or more).

The NATO ammunition data card is contained on the following page.

AC/258

NATO DATA CARD
AMMUNITION CLASSIFICATION TEST RESULTS

1. SECURITY CLASSIFICATION: UNCLASSIFIED

3. TESTING NATION:

5. ADDRESS OF NATIONAL TESTING AUTHORITY:
DIRECTOR
USA AMC FIELD SAFETY ACTIVITY
ATTN: AMXOS-SE
CHARLESTOWN, IN 47111-9669

2. NATO TEST REFERENCE:

4. TESTING SERVICES AND REFERENCE:

6. NATO STOCK NUMBER: 1390-01-158-8193 N286

7. CALIBRE OR WEIGHT: 20.775Kg (45.8 lbs)

8. ITEM NAME AND MODEL DESIGNATION: Fuze MTSQ M582A1

9. TYPE OF PACKAGE AND PACKING MATERIALS:
M2A1 Ammunition Box with Tubes for Non Propagating Packaging

9. GROSS WEIGHT OF ITEM (ROUND, BOMB, ETC) KG	11. NUMBER OF ITEMS IN EACH PACK	12. GROSS WEIGHT OF PACK KG	EXPLOSIVES PER ITEM (KG) 13. TYPES OF EXPLOSIVE	14. TOTAL QUANTITY	15. NET QUANTITY FOR COMPUTATION OF QD
20.775 Kg (45.8 lbs)	8 per metal box 16 per wire-bound box	9.89 Kg (21.8 lbs)	(a) BURSTING CHARGES		
			(b) PROPELLANT		
			(c) OTHER EXPLOSIVES	.0239 Kg	.0239 Kg.

16. HAZARD DIVISION: 1.4

17. COMPATIBILITY GROUP: D

18. UN SERIAL NO: 0410

19. AUTHORITY AND DATE:
a. TB 700-2
b. LETTER, DRCSF, SUBJECT: COORDINATION AND APPROVAL OF HAZARD CLASSIFICATION, 6 AUG 81
c.

20. SINGLE PACKAGE DETONATION TEST RESULTS

FIRST TEST : No Detonation of total contents No propagation between Fuzes in the container.

SECOND TEST: No Detonation of total contents. No propagation between Fuzes in the container.

THIRD TEST : No Detonation of total contents. No progapation between Fuzes in the container.

21. STACK DETONATION TEST RESULTS

NUMBER OF PACKAGES IN TEST:

FIRST TEST : Tests not performed

SECOND TEST:

THIRD TEST :

22. STACK FIRE TEST RESULTS NUMBER OF PACKAGES IN TEST:

First reaction occurred 7 minutes after initiation of fire stack. Sporadic eruptions with an audible report continued for approximately 34 minutes. There was no mass detonation of total contents. Maximum debris distance (no hazardous fragments) was 265 feet.

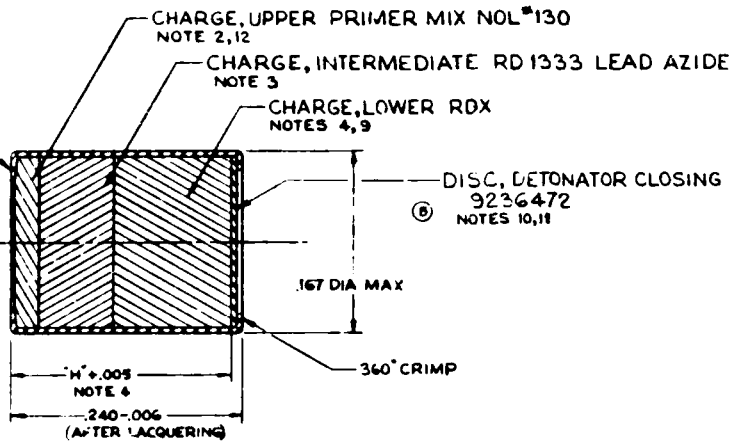
23. REMARKS:

TABLE I

FRAGMENTS RECOVERED FROM WESTERLY PACK

FRAGMENT WEIGHT (GRAMS)

LAYER 1	LAYER 2
.26	1.26
.10	.20
.09	.17
.03	
.02	



REVISIONS				
SYM	DESCRIPTION	DATE	APPROVAL
—	ECPA-S4521-1 (REL) 11-6-68	11-6-68	
A	ECPA 56117-1	5-7-69	
B	NOR 7200829-1	7-28-72	
C	NOR A2A0002 820226	820310	
D	NOR A9A9068 830608	83-12-27	

NOTES:-

(B) 1-SPEC MIL-A-2550 AND MIL-D-48111 APPLY.

2-UPPER CHARGE:- 23 ± 3 MILLIGRAMS PRIMER MIX NOL* 130 (NOTE 5) PRESS AT APPROXIMATELY 70,000 PSI.

(A) 3-INTERMEDIATE CHARGE:- 75 ± 5 MILLIGRAMS RD 1333 LEAD AZIDE (SPEC MIL-L-46225) PRESS AT 30,000 ± 3,000 PSI. (NOTE 14)

(C) 4-LOWER CHARGE:- APPROXIMATELY 70 MILLIGRAMS RDX PELLET, TYPE I, (SPEC MIL-P-45486) PREPELLETED TO A DENSITY OF 1.60 ± .03 GRAMS/CC WITH A .151 OD MAX AND RECONSOLIDATED AT 20,000 PSI MIN AND 50,000 PSI MAX ESTABLISH "H" TO PROVIDE TIGHT CRIMPING OF CLOSING DISC. A VALUE OF .223 HAS BEEN USED SATISFACTORILY FOR "H" (NOTE 9). DIMENSION APPLIES BEFORE CRIMPING.

(B) 5-PRIMER MIX NOL*130-

COMPOSITION	PERCENTAGE BY WEIGHT
BASIC LEAD STYPHNATE, TYPE I, SPEC MIL-L-16355 (NOTE 6)	40 % ± 2 %
ANTIMONY SULFIDE, CLASS 5, SPEC MIL-A-159	15 % ± 1.5 %
BARIUM NITRATE, CLASS 1, GRANULATION A, SPEC MIL-B-162 (NOTE 7)	20 % ± 2 %
LEAD AZIDE, TYPE I, SPEC MIL-L-3055	20 % ± 2 %
TETRACENE, SPEC MIL-T-46938 (NOTE 8)	5 % ± 0.5 %

6-BASIC LEAD STYPHNATE SHALL PASS 90% MIN THROUGH A No. 325 U.S. STANDARD SIEVE, SPEC RR-S-366.

7-BARIUM NITRATE SHALL PASS 99% MIN THROUGH A No. 70 U.S. STANDARD SIEVE AND BE RETAINED 99% MIN ON A No. 140 U.S. STANDARD SIEVE, SPEC RR-S-366.

8-TETRACENE SHALL PASS 50% MIN THROUGH A No. 325 U.S. STANDARD SIEVE, SPEC RR-S-366

(A) 9-ALTERNATE LOWER CHARGE APPROXIMATELY 70 MILLIGRAMS RDX, TYPE B, CLASS A (SPEC MIL-R-398). PRESS AT APPROXIMATELY 20,000 PSI AND ESTABLISH "H" TO PROVIDE TIGHT CRIMPING OF CLOSING DISC. A VALUE OF .223 HAS BEEN USED SATISFACTORILY FOR "H". DIMENSION APPLIES BEFORE CRIMPING.

10-AFTER CRIMPING SEAL JOINT AND COAT CLOSING DISC WITH GREEN, NO 14110 LACQUER, CELLULOSE NITRATE, TYPE I, SPEC MIL-L-10287. FOR IDENTIFICATION. COATING OF END OF CUP PERMITTED.

11-DETONATOR CLOSING DISC MUST BE TIGHT. SLIGHT BULGE PERMITTED WITHIN TOLERANCE.

12-ADVISORY:- CARE SHOULD BE TAKEN TO INSURE THAT THE INGREDIENTS OF FRESH PRIMER MIX HAVE NOT SEGREGATED BEFORE PRIMER MIX

(C) IS LOADED INTO DETONATOR.

13-EXTERIOR OF ASSEMBLY MUST BE FREE OF EXPLOSIVES.

(A) 14-ALTERNATE MATERIAL: LEAD AZIDE (SPECIAL PURPOSE) SPEC MIL-L-14758(MU).

(B)

FIGURE 1

(D) U.S. ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER DOVER, NEW JERSEY 07801

CURRENT DESIGN ACTIVITY FSCM NO. 19200

(C)(B) PART NO. 9236470

(C) SEE SEPARATE PARTS

(B) 9236470

(D)		FUZE, M582E1	ORIGINAL DATE OF DRAWING 9 NOV 1968	PICATINNY ARSENAL DOVER, NEW JERSEY
(B)	9236825	FUZE, M577E1		DETONATOR, STAB: M94
	9236826	FUZE, M582		
		FUZE, M577		
	NEXT ASSY	USED ON		
	APPLICATION			
	DO NOT	APPLY PART NO.		SIZE D FSCM NO. 19203 9236470

APPLICATION		REVISIONS			
NEXT ASSY	USED ON	SYM	DESCRIPTION	DATE	APPROVAL
		-	PRODUCTION RELEASE ERR A9A9068 830608 (ECP A3A2070 831101)	83-12-27	

NATIONAL STOCK NO.	COMBINATION OF ADOPTED ITEMS	DWG OR PART NO.
1390-01-158-8193 N286	16 - FUZE, MTSQ, M582E1	9352383
	16 - TUBE	9328329
	2 - SUPPORT, TOP	9232149
	2 - BOX, AMMUNITION, M2A1	7553296
	1 - BOX, WIREBOUND	8861213

NOTES:

1 - INNER PACKAGING - 8 FUZES PER M2A1 METAL BOX, PACKAGED IN ACCORDANCE WITH DWG. 8864492.

2 - OUTER PACKAGING - 2 M2A1 BOXES (16 FUZES) IN A WOOD WIREBOUND BOX, PACKAGED IN ACCORDANCE WITH DWG. 8861213.

PART NO. 9362795

ORIGINAL DATE OF DRAWING 83-12-27		U S ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER DOVER, NEW JERSEY 07801		
DRAFTSMAN JS	CHECKER	COMBINATION OF ADOPTED ITEMS FOR: FUZE, MECHANICAL TIME AND SUPERQUICK, M582E1		
ENGR	ENGR			
ENGR	ENGR			
		SIZE A	FSCM NO. 19200	9362795
		SCALE —	UNIT WT	SHEET

ARRADCOM FORM 65 JUN 78 REPLACES SARPA FORM 1038 OCT 75 WHICH IS OBSOLETE

NOTES:
1. SPEC. MIL-A-2550 AND MIL-F-46880 (FA) APPLY.
2. APPLY ADHESIVE DWG 9236736 OR ADHESIVE SEALANT, SILICONE, RTV, GENERAL PURPOSE, PER MIL-A-46106, TYPE I, COLOR WHITE, TO INDICATED THREADS 360° AND ASSEMBLE BOOSTER CUP WHILE ADHESIVE IS WET.
3. BOOSTER CUP TO WITHSTAND A DISASSEMBLY TORQUE OF 35 INCH POUNDS MINIMUM.
4. MARK OR STAMP WITH GOTHIC CAPITAL LETTERS, LOT NO AND DATE LOADED, MONTH AND YEAR, USING INK, STENCIL, WHITE NO 27875 OR 37875 TYPE I OR II, SPEC TT-I-1795.

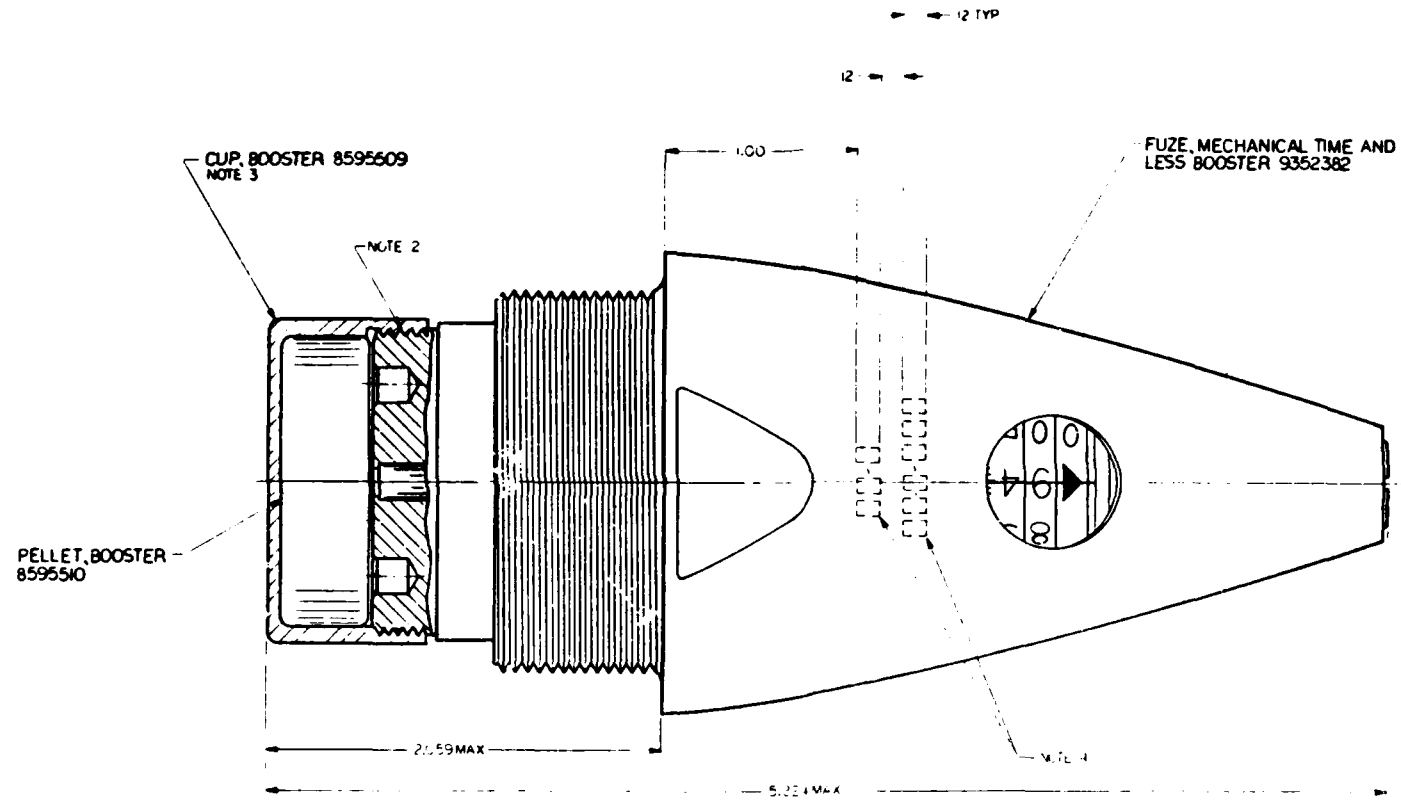
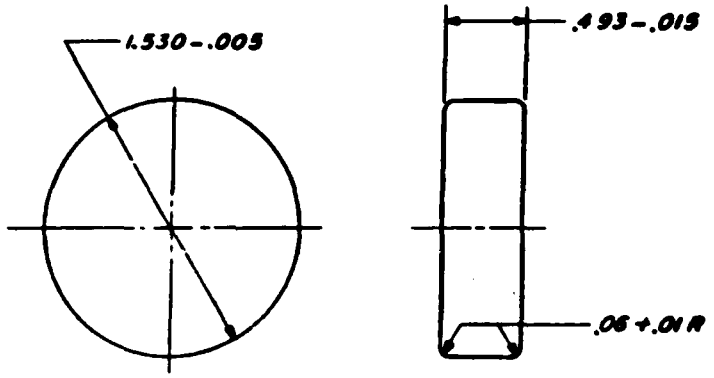


FIGURE 3

PART NO 9352383

FUZE, MECHANICAL TIME AND SUPERQUICK, M582E1

F 19200 9352383



REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
G		5-5-71	
H	REDRAWN & REVISED BAS "B" SIZE E.O. NO. A10356, A20003, A20004	1-12-72	DMD

NOTE:

1- INTERPRET DRAWING IN ACCORDANCE WITH MIL-A-2550 AND ALL DOCUMENTS CONTAINED THEREIN.
2- MATERIAL - PELLET RDX, TYPE III A, SPEC. MIL-P-45486.
3- PELLETIZE AS SHOWN WITH 23.264 ± 1.020 GMS.
4- ALTERNATIVE METHOD OF MANUFACTURE :- PERMIT .06 +.01 R ON ONLY ONE SIDE OF BOOSTER PELLET. ALTERNATIVE IS PERMISSIBLE ONLY WHERE ADEQUATE CONTROLS FOR PROPER ASSEMBLY ARE APPLIED.
5- A PELLET WHICH FAILS TO MEET THE WEIGHT REQUIREMENT PER NOTE 3 BUT MEETS THE DIMENSIONAL REQUIREMENTS SHALL BE ACCEPTABLE PROVIDED THE DENSITY OF THE PELLET IS BETWEEN 1.50 AND 1.70 GM/CC.
6- ADVISORY:- THE FACE OF PUNCHES USED TO CONSOLIDATE COMP A-5 SHOULD HAVE A FOUR (4) MICRO FINISH MIN. TO PREVENT STICKING.
7- ADVISORY:- IF THE COMP A-5, AS RECEIVED, HAS A SPREAD IN THE BULK DENSITY GREATER THAN ± .025 GM/ML, BLEND THE COMP A-5 TO OBTAIN A HOMOGENEOUS MIXTURE. A BLENDING TIME OF APPROXIMATELY 30 MINUTES HAS BEEN FOUND ACCEPTABLE WHEN USING A 550 POUND CAPACITY, BAFFLELESS, GEMCO BLENDER REVOLVING AT APPROXIMATELY 32 RPM.

EXPLOSIVES HAZARD CLASSIFICATION CLASS 3
STORAGE COMPATIBILITY GROUP B
DEPARTMENT OF TRANSPORTATION (DOT)
HAZARD CLASS A DOT MARKINGS BOOSTERS (EXPLOSIVES) HANDLE CAREFULLY.

PART No. 8595510

FIGURE 4

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± DECIMALS ± ANGLES ± MATERIAL SEE NOTE HEAT TREAT FINISH	ORIGINAL DATE OCT 21, 1959 DRAFT WPJ CHK J.A.m. TRACE CHK ENGR QAC CHK SUBMITTED Dave M. Barr APPROVED E J Kenney	U.S. ARMY FRANKFORD ARSENAL PHILADELPHIA, PA. 19137 PELLET BOOSTER SIZE C CAGE CODE NO. 19200 DRAWING NO. 8595510 SCALE 2/1 UNIT WT. SHEET 1 OF 1	

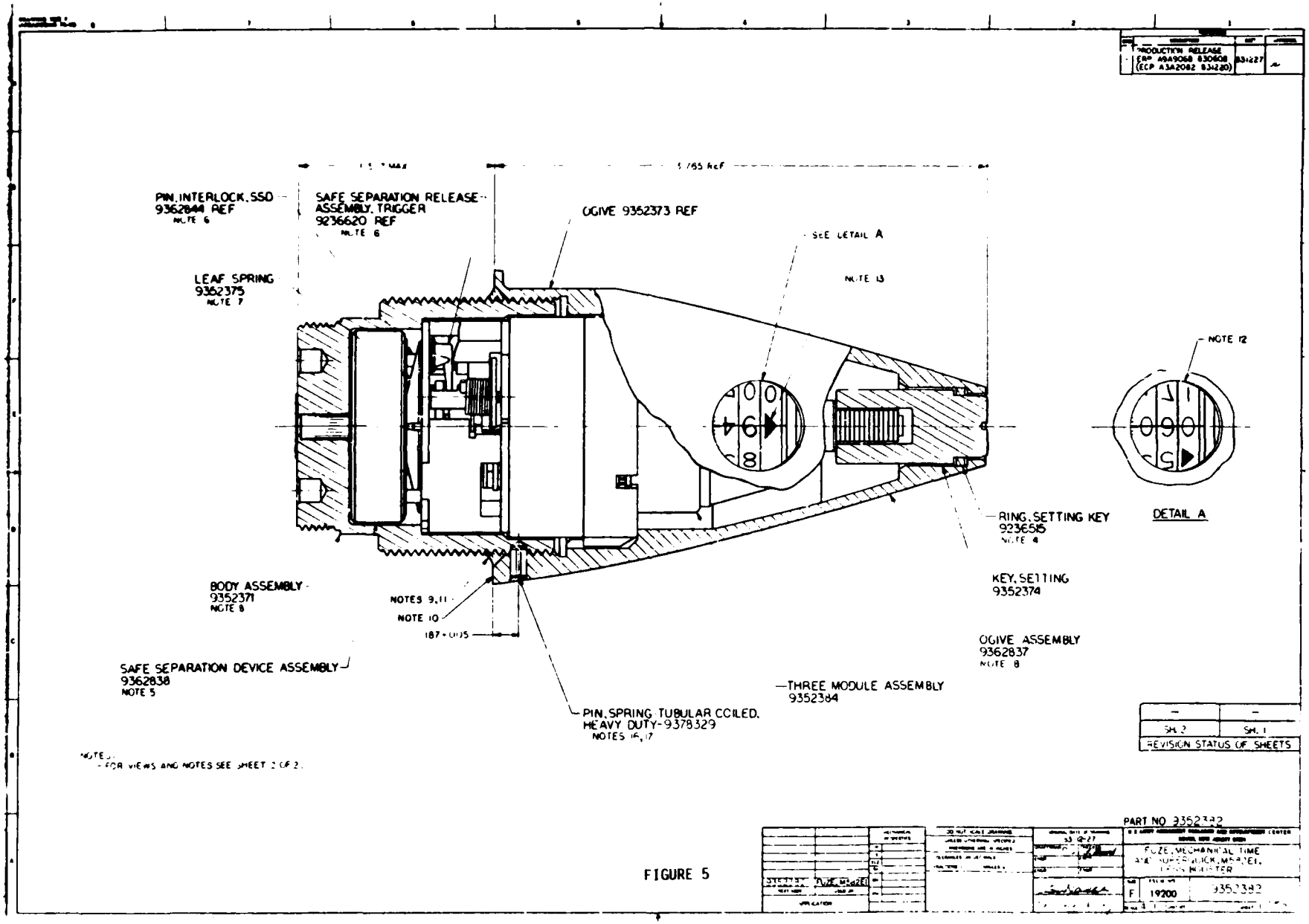

PRODUCTION RELEASE
PIN, INTERLOCK, SSD
9362844 REF
NOTE 6
SAFE SEPARATION RELEASE ASSEMBLY, TRIGGER
9236620 REF
NOTE 6
OGIVE 9352373 REF
SEE DETAIL A
NOTE 13
LEAF SPRING
9352375
NOTE 7
NOTE 12
DETAIL A
RING, SETTING KEY
9236515
NOTE 4
KEY, SETTING
9352374
BODY ASSEMBLY
9352371
NOTE 8
NOTES 9,11
NOTE 10
.187 +.005
OGIVE ASSEMBLY
9362837
NOTE 8
SAFE SEPARATION DEVICE ASSEMBLY
9362838
NOTE 5
THREE MODULE ASSEMBLY
9352384
PIN, SPRING TUBULAR COILED, HEAVY DUTY-9378329
NOTES 16,17
NOTE 1
- FOR VIEWS AND NOTES SEE SHEET 2 OF 2.
SH. 2
SH. 1
REVISION STATUS OF SHEETS
PART NO 9352382
FUZE, MECHANICAL TIME AND SUPERQUICK, MODEL
F
19200
9352382

FIGURE 5

-	PRODUCTION RELEASE (FOR 49A9060 830608, (ECP 43A2082 831220)	83227	JV

NOTES -

1 SPEC MIL A-2550 AND MIL-F-64042 APPLY.

2 - COMPLIANCE WITH TESTS (PERFORMANCE AND LABORATORY) REQUIRED BY THE SPECIFICATION AND DRAWINGS IS MANDATORY. THE CONTRACTOR WILL NOT ASSUME, NOR DOES THE GOVERNMENT GUARANTEE, THAT ALL POSSIBLE COMBINATIONS PERMITTED BY THE TOLERANCE LIMITS OF THE SPECIFICATIONS AND DRAWINGS WILL CONSISTENTLY SATISFY THE TEST REQUIREMENTS. THEREFORE, THE MANUFACTURER IS OBLIGATED TO CHOOSE THE COMBINATIONS OF TOLERANCES AND FITS WITHIN THE LIMITS OF THE SPECIFICATION AND DRAWINGS THAT BEST SUIT HIS PROCESS NEEDS AND STILL SATISFY THE TESTING REQUIREMENTS.

3 THE AXIAL RELATIONSHIP OF THE PARTS ILLUSTRATED IS FOR REPRESENTATION ONLY AND IS NOT NECESSARILY TRUE ORIENTATION.

4 APPLY GREASE DWG. 9236520 OVER ENTIRE SURFACE OF RING, SETTING KEY.

5 - PRIOR TO ASSEMBLY, SAFE SEPARATION DEVICE ASSEMBLY MUST BE IN THE SAFE POSTION WITH DETENTS ENGAGING THE ROTOR.

6 - PIN, INTERLOCK, SSD MUST ENGAGE SAFE SEPARATION RELEASE ASSEMBLY, TRIGGER.

7 ASSEMBLE LEAF SPRING ONLY IN ORIENTATION SHOWN.

8 - TIGHTEN BODY ASSEMBLY TO OGIVE ASSEMBLY WITH A TORQUE OF 45.0 ±10.0 FOOT POUNDS. (RIGHT HAND THREAD REF.)

9 - AFTER ASSEMBLY, APPLY SEALANT, ADHESIVE, DWG 9236736 IN THE GROOVE CREATED BY THE CHAMFER. ADVISORY PROCEDURES FOR SEALANT APPLICATION ARE PROVIDED BY DWG. NO. 9236737.

10 NO ADHESIVE IS PERMISSIBLE ON THIS FLAT END SURFACE OF THE OGIVE.

11 NO ADHESIVE IS PERMISSIBLE ON BODY ASSEMBLY MORE THAN ONE THREAD BEYOND OGIVE.

12 - AFTER THE REQUIREMENT OF NOTE 8 IS MET, SET FUZE TO 60.0 SECONDS BY APPLYING POSITIVE SETTING TORQUE (COUNTER CLOCKWISE). WHEN TORQUE IS REMOVED THE COUNTER SHALL READ 60.0 SECONDS WHEN READ TO THE NEAREST TENTH OF A SECOND.

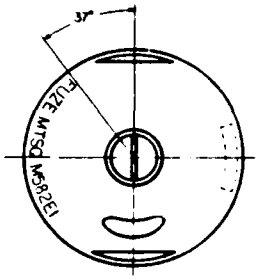
13 - AFTER THE REQUIREMENTS OF NOTES 8 AND 12 ARE MET, APPLY TORQUE IN A CLOCKWISE DIRECTION TO A FUZE SETTING OF 49.5 TO 49.9.

14 - STAMP AS SHOWN, INCLUDING MANUFACTURER'S LOT NUMBER PER MIL-STD-1168, WITH LETTERS AND NUMBERS .12 HIGH x .01 DEEP CENTRALLY LOCATE MARKINGS BETWEEN WRENCH FLATS.

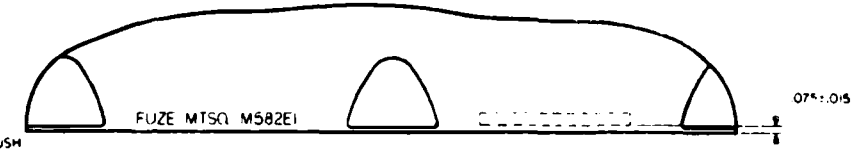
15 - AFTER THE REQUIREMENTS OF NOTE 14 HAVE BEEN PERFORMED, APPLY FINISH 20.1 OF MIL-STD-171, BLACK NO. 37038, TO AREAS EXPOSED AS A RESULT OF THE APPLICATION OF MARKING OR HANDLING.

16 - AFTER THE REQUIREMENTS OF NOTES 13, 14, AND 15 ARE MET, MACHINE (1) .125 +.004 DIA HOLE TO LOCATION INDICATED. (RADIAL LOCATION MUST NOT INTERFERE WITH WRENCH FLATS OR MARKING) DIAMETER DEPTH, TOOL POINT INCLUDED, MUST NOT BREAK THROUGH INNER WALL OF BODY, BUT MUST INSURE SEATING OF PIN, SPRING - TUBULAR COILED, HEAVY DUTY, DWG 9378329, FLUSH OR BELOW. INSERT PIN, SPRING, FLUSH OR BELOW, AND FILL CAVITY WITH SEALANT, ADHESIVE DWG. 9236736, FLUSH OR BELOW.

17 - THE REQUIREMENTS OF NOTE 16 MUST BE ACCOMPLISHED ON ALL SAMPLES SUBMITTED FOR LOT ACCEPTANCE TESTS. IT IS PERMISSABLE, HOWEVER, TO DEFER THE DRILLING AND PIN INSERTION REQUIREMENTS ON THE REMAINDER OF THE LOT QUANTITY PENDING BALLISTIC TEST RESULTS.



TOP VIEW



DEVELOPED VIEW
NOTE 14

FIGURE 6

PART NO 9236242

FUZE, MECHANICAL TIME AND SUPERQUICK, M582E1, CBU BOOSTER

F 19200

NOTES:

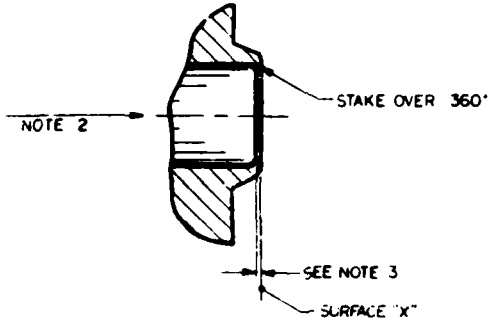
1 - SPEC MIL-A-2550 APPLIES.

2 - STAKE MUST WITHSTAND AN AXIAL PUSH-OUT FORCE OF 5LBS MIN IN DIRECTION SHOWN PRIOR TO ASSEMBLY OF CLOSURE DISC.

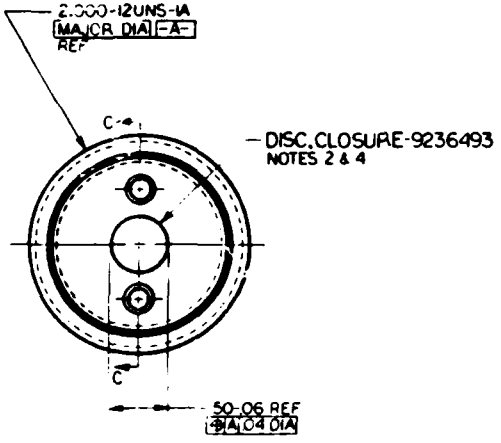
3 - AFTER STAKING, STAKE AND LEAD MUST BE FLUSH OR BELOW SURFACE "X".

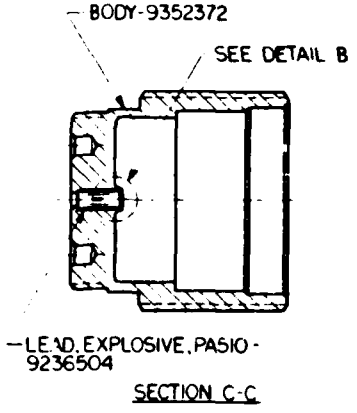
4 - CLOSURE DISC SHALL BE UNIFORMLY APPLIED AND SHALL EXHIBIT NO EVIDENCE OF BUBBLES OR CREASES.

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
-	PRODUCTION RELEASE ERR A9A9068 830608	83-12-27	



DETAIL B
SCALE 10/1





SECTION C-C

FIGURE 7

SEE SEPARATE PARTS LIST - 9352371

PART NO 9352371

DRAWN	DS
DATE	83-12-27
	BODY ASSEMBLY
SIZE	D
FSCM NO.	19200
	9352371
SCALE	2/1

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
B	REPLACES REV A WITH CHANGE NOR A9A9068 830608 (ECP A7S9004 770819)	83-427	

(A) SPEC MIL-A-8625 AND MIL-L-46058 APPLY.

(A) 3- LOAD WITH TWO (2) PELLETS, EXPLOSIVE COMPOSITION, TYPE III, PER SPEC MIL-P-46058. EACH PELLET SHALL WEIGH 120.0 ± 3.0 MILLIGRAMS AND BE NO MORE THAN .164 INCH OUTSIDE DIAMETER. THE FIRST PELLET SHALL BE CONSOLIDATED AT 16,000 ± 1000 PSI AND THE LAST PELLET TO DIMENSION "H". (NOTE 10).

(B) (A) 4- IF ALTERNATIVE LOADING IS USED, DISC AND CUP SHALL BE ASSEMBLED PRIOR TO LOADING BY COATING THE ENTIRE INTERIOR SURFACE AND BOTTOM OF CUP, LEAD WITH SHELLAC, TYPE 1, SPEC TT-S-271 AND SETTING DISC, RETAINER ON COATED SURFACE.

5- DISC AND .THRU .TO BE COATED WITH LACQUER, CELLULOSE NITRATE, TYPE I, COLOR BLUE NO. 15102, SPEC MIL-L-46027 (NOTE 9).

6- NON-CRIMP AT TWO STAGES - 45° THICK FLAT.

6- SLIGHT BULGE PERMITTED. DISC MUST BE TIGHT.

7- DIMENSIONS APPLY AFTER LACQUERING.

8- EXTERNAL SURFACE MUST BE FREE OF EXPLOSIVE.

9- 2 - DISC RETAINER MAY BE CLASSED FROM ALUMINUM STRIP WHICH HAS BEEN PRE-COATED WITH LACQUER, CELLULOSE NITRATE, TYPE I COLOR BLUE NO. 15102, SPEC MIL-L-46027 OR WHICH HAS BEEN FINISHED PER THE REQUIREMENTS OF FINISH NO. 7 2 2 COLOR BLUE NO. 15102 OR NO. 35102, SPEC MIL-STD-171. EDGES NEED NOT BE COLORED.

(A) 10- ALTERNATIVE LOADING - LOAD WITH 250.0 ± 5.0 MILLIGRAMS OF POWDER AS SPECIFIED FOR PELLETS, EXPLOSIVE COMPOSITION, TYPE III PER SPEC MIL-P-46058 IN A MINIMUM OF TWO (2) APPROXIMATELY EQUAL INCREMENTS. CONSOLIDATE EACH INCREMENT AT APPROXIMATELY 16,000 PSI TO OBTAIN AN OVERALL DENSITY OF 1.65 ± .07 GM/CC AND TO DIMENSION "H" (NOTES 3,11)

(A) 11- IF ALTERNATIVE LOADING IS USED, PROVISION MUST BE MADE TO DETERMINE THE DENSITY OF THE CONSOLIDATED EXPLOSIVE WITHIN THE CUP. DENSITY DETERMINATION MAY BE MADE PRIOR TO INSERTION OF DISC, RETAINER AND PERFORMANCE OF 360° CRIMP OR BY CUTTING THE END OFF THE COMPLETELY ASSEMBLED LEAD AND FOLLOWING THE PROCEDURE SPECIFIED IN SPEC MIL-L-46058.

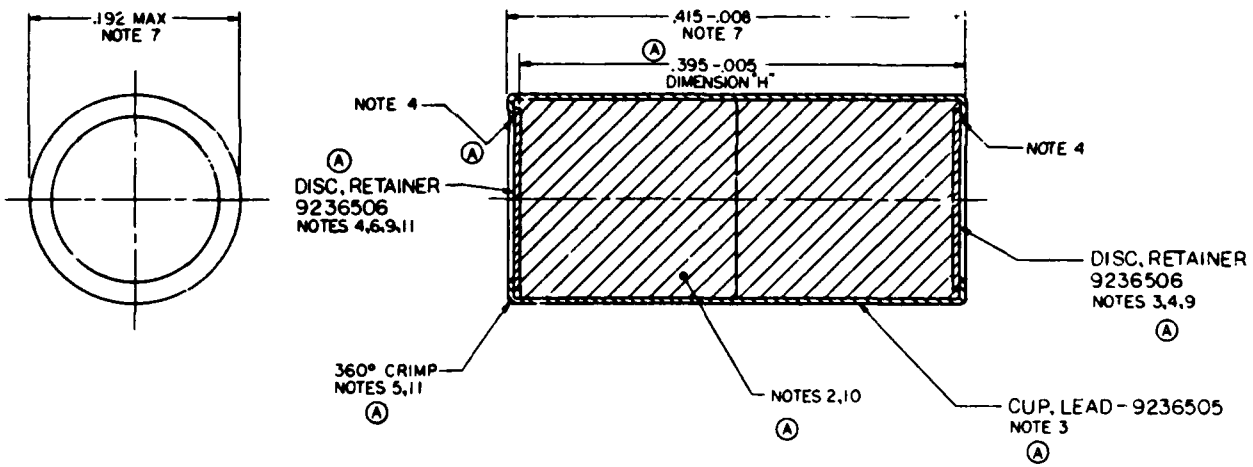


FIGURE 8

(B) ORIGINAL DESIGN ACTIVITY FSCM NO. 19203

(B) SEE SEPARATE PARTS LIST - 9236504 PART NO. 9236504 (A)

9352371	FUZE M582E1
	FUZE M577E1
	FUZE M582
9236502	FUZE M577

APPLICATION

28 AUG 1972

W. SMITH

MARMS-HOGANSON

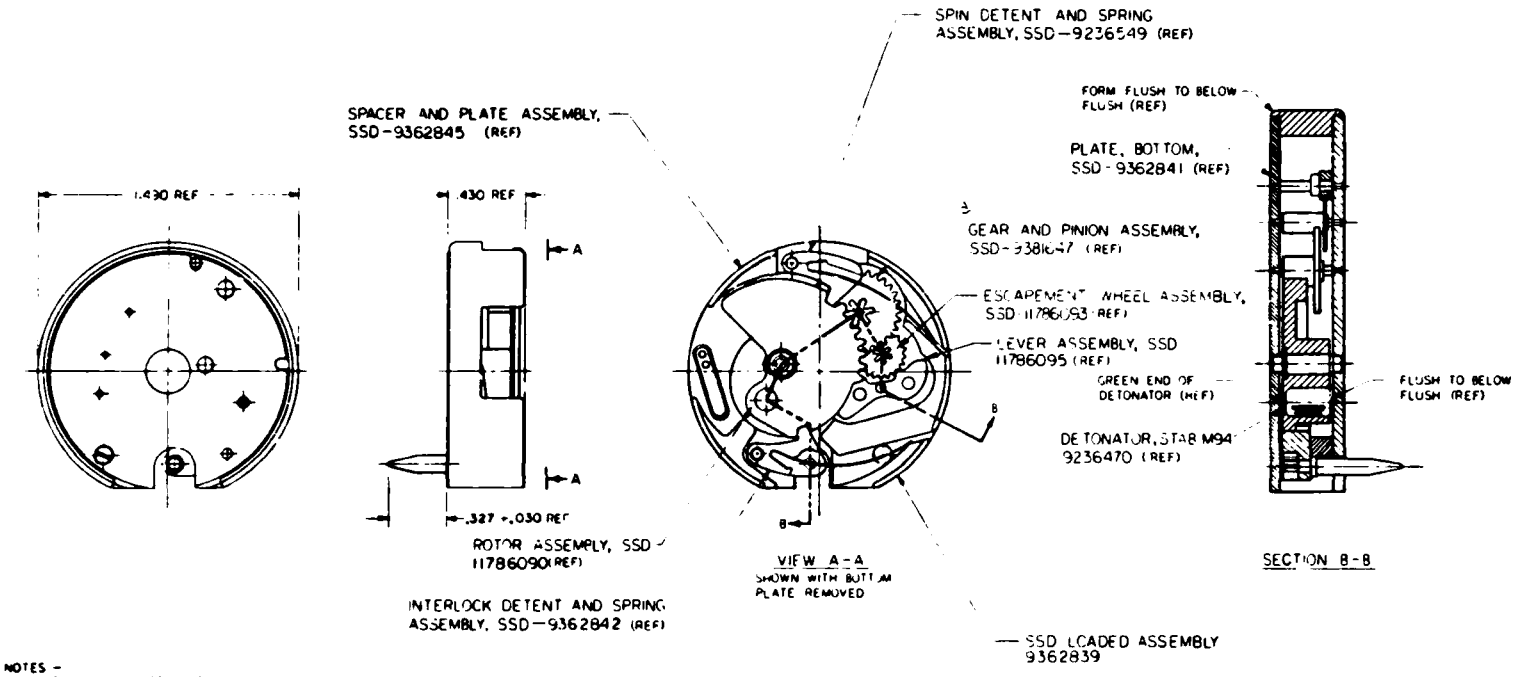
DANIEL J TARAVELLA

U S ARMY ARMAMENT RESEARCH AND DEVELOPMENT CENTER
DOVER, NEW JERSEY 07801

LEAD, EXPLOSIVE, PA510

SIZE D | FSCM NO. 19200 | 9236504

SCALE 20/1



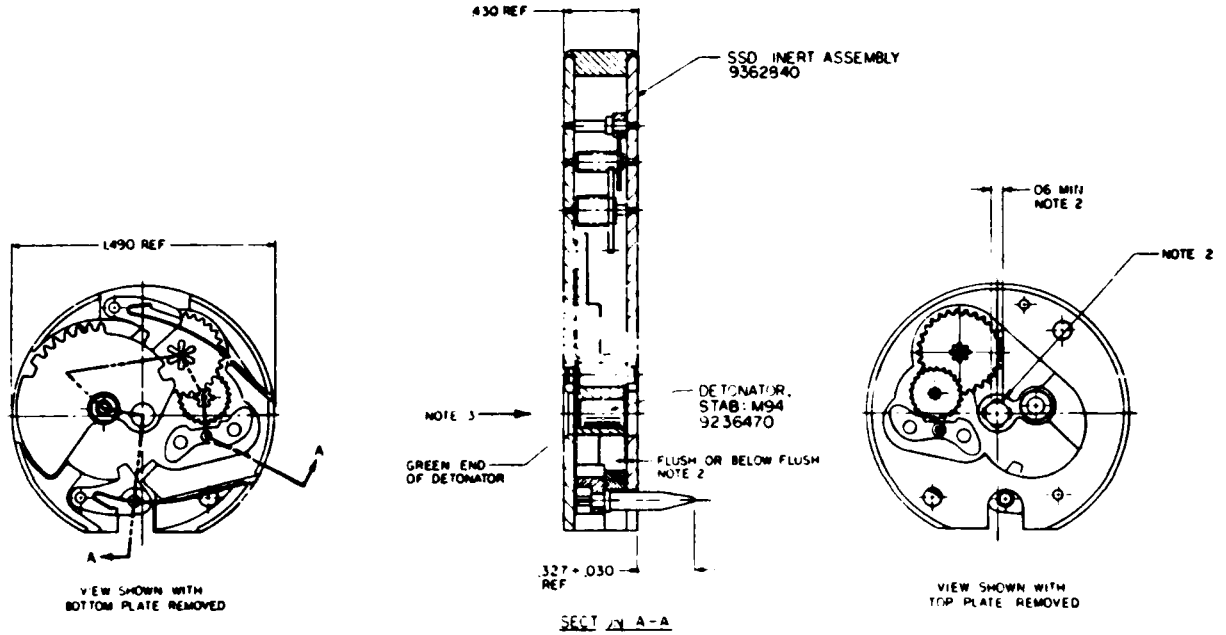
NOTES -
1- SPEC MIL-A-2550 APPLIES.
2- THE LOCK, ROTOR, SSD, DWG 11786098, OF THE SPACER AND PLATE ASSEMBLY, SSD, DWG 9362845, MUST DETENT IN THE ARMED POSITION.
3- DETENTS MUST NOT RELEASE THE ROTOR ASSEMBLY AT 1000 ± 25 RPM, DETENTS MUST RELEASE THE ROTOR ASSEMBLY AT 1800-25 RPM; ROTOR ASSEMBLY MUST ARM WITHIN 89 SECONDS TO 162 SECONDS AT 1775 TO 1800 RPM

FIGURE 9

SEE SEPARATE PAR [illegible] 362938 PART NO 9362839

SAFE SEPARATION DEVICE ASSEMBLY

F 19200 9362938



NOTES -
1 - SPEC MIL-A-2550 APPLIES.
2 - SHAKE ROTOR ASSEMBLY, SSD, OVER DETONATOR, 4 PLACES MIN EQUALLY SPACED AS SHOWN
3 - DETONATOR TO WITHSTAND A NON-DESTRUCTIVE AXIAL UNSEATING
LOAD OF 3.00 ± .25 LB. IN DIRECTION SHOWN.

FIGURE 10

SEE SEPARATE PARTS LIST - 9362839 PART NO 9362839

SSD LOADED ASSEMBLY

F | 19200 | 9362839

FIGURE 11

AMMUNITION DATA CARD

M582A1 FUZES IN METAL AMMO BOXES WITH NON-PROPAGATING PACK

DEPARTMENT OF DEFENSE AMMUNITION DATA CARD		FORM APPROVED BUDGET BUREAU NO. 22-R0268	LOT NUMBER MA-85E005-001
ITEM NOMENCLATURE Fuze, MTSQ, M582A1	NSN 1390 01 158 8193-N286	PACKING OF LOT 8 Fuzes/Metal Ammo. Box, M2A1; 2 Metal Ammo. Boxes/Wirebound Box, Dwg. 8861213/AK; 36 Boxes/Pallet (Non Propagating Pack)	
MANUFACTURING, LOADING OR ASSEMBLING ACTIVITY MILAN ARMY AMMUNITION PLANT	NET QUANTITY 10,368		

CONTRACTOR MARTIN MARIETTA ORDNANCE SYSTEMS, INC.	CONTRACT OR ORDER NO. PRON No. F1498279	DRAWING OR REVISION 9352383 (See Note 2)	SPECIFICATION & REVISION See Note 1	
DATE STARTED 5-6-85	DATE COMPLETED 5-7-85	DATE INSPECTED 5-7-85	LINE H	ZONE WT SHELL
CHARGE WEIGHT	EXPECTED MUZZLE VELOCITY	EXPECTED PRESSURE	SHELL WEIGHT	
EXPLOSIVE WT PER PKG	INDEX OF POWDER	MPD IN INCHES	PPDR IN INCHES	
NUMBER OF TEST SAMPLES 30	SENT TO Jefferson PG	DATE AND MODE OF SHIPMENT 5-10-85 C/C BTR No. 167-84		

COMPONENTS (CONTINUE ON REVERSE, IF NECESSARY).

COMPONENT	DRAWING NO.	MODEL	MANUFACTURER	DATE MFG LOT NO	QUANTITY
Fuze, MTSQ Less Booster	9352382	M582A1	Hamilton Tech. Inc	HAT85B016-009	10,398

DISPOSITION	TYPED NAME OF GOVERNMENT INSPECTOR	
ACCEPTED	Jerry Laster	
DD FORM 1629 1 FEBRUARY 1968	SIGNATURE John E Barker	6/14/85

LIST OF PARTS

LINE NO.	NAME OF PART	REQ'D	MATERIAL KIND	MATERIAL GRADE	SPEC NUMBER	REMARKS
1	BOX, PACKING	1	WOOD	A, TYPE I, CL 2	MIL-B-46506	
2						
3						
4						
5						
6						
7						
8	SEAL, METALLIC	1			F8796A2	
9	SEPARATOR	A	SHEET FORM		MIL-F-50449	
10						
11						
12						
13						
14						
15						

A - AS REQUIRED.

SYM	DESCRIPTION	DATE	APPROVAL
AA	NOR7600675-4	11-08-76	
AB	MOR A1K 2532	9-19-77	
AC	NOR A1K5000 / 9-28-77	77-09-30	
AD	NOR A8K3714	78-04-18	
AE	NOR A8K 2533 / 78-07-28	78-08-04	
AF	NOR A8K2811 / 78-08-28	78-10-11	
AG	NOR A8K2525/79-11-01	79-11-19	
AH	NOR A8K8701/80-09-26	81-02-27	
AJ	NOR A1A3074 / 81-11-06	82-02-09	
AK	NOR A2A2018 820609	820726	

SYM	DESCRIPTION	DATE	APPROVAL
R		5-2-69	
S	NOR7201001-4 / 72-12-72	2-12-73	
T	NOR 73?1166-4	10-25-73	
V	NOA7500080-4/01-28 75	02-26-75	
W	NOR7500709-4	8-25-75	
X	NOR7A90017-4/02-12-76	02-17-76	

BOX PACKING

14 1/4 x 12 1/16 x 7 9/16 INSIDE DIMENSIONS
TOLERANCE ON INSIDE DIMENSIONS ± 1/8
ADVISORY I D 14 5/8 x 12 13/16 x 8 9/16

SEPARATOR
10 1/2 MIN x 7 1/2 MIN x 1/16 THICK

PACKING INSTRUCTIONS

PACK TWO M2A1 METAL BOXES VIDTWISE IN WIREBOUND BOX WITH LATCHES TOWARD THE FRONT OF THE WIREBOUND BOX. PLACE TWO SEPARATORS BETWEEN THE METAL BOXES WITH THE 10 1/2 MIN DIMENSION IN VERTICAL POSITION. BEND OVER END OF EACH SEPARATOR SO THAT A MINIMUM OF 4 INCHES RESTS ON TOP OF EACH METAL BOX. ADD SEPARATORS BETWEEN THE METAL BOXES AS REQUIRED FOR TIGHT PACKING. ADD SEPARATORS BETWEEN THE LATCH END (FRONT) OF METAL BOXES AND WIREBOUND BOX WHEN REQUIRED FOR TIGHT PACKING. FOR CLOSING, SEALING AND REPAIR INSTRUCTIONS SEE DMS C8796522.

MARKING INSTRUCTIONS

THE BOX SHALL BE MARKED IN ACCORDANCE WITH DMS C8796522.
THE DOT MARKING TO BE APPLIED SHALL BE AS PERTINENT:- SEE TABLE.
THE DESCRIPTIVE NOMENCLATURE OF THE ITEM PACKED SHALL BE AS PERTINENT:- SEE TABLE.
THE CUBICAL DISPLACEMENT SHALL BE:- "0.9"
THE NSN AND ODOIC SHALL BE:- SEE TABLE.
NOTE:- WHEN MARKING LOT NUMBER ON END CLEATS OF BOX, THE HEIGHT OF LETTERS AND FIGURES MAY BE REDUCED. REDUCTION IN SIZE SHALL BE NO GREATER THAN REQUIRED TO PERMIT TWO ROWS OF MARKING.

LINE NO.	LIST OF DRAWINGS	DRAWING NUMBER
1		
2		
3		
4		
5		
6		

LINE NO.	WEIGHTS (ESTIMATED) PART	POUNDS
1		
2		
3		
4		
5		

FOR KIT, PACKING, FOR ARTILLERY AND ROCKET FUZES SEE DRAWING 4924089

FOR CLARIFICATION OF LEVEL A, B AND C SHIPMENT OF FUZES, SEE SPEC MIL-P-60412

FOR M2A1 METAL BOX PACKING FUZES, SEE DRAWING F8854A92.

SEE SEPARATE PARTS LIST 8861213

FIGURE 12

FINAL	
SEE ENGINEERING RECORDS	
NEXT ASSY	USED ON
APPLICATION	

MECHANICAL PROPERTIES	
YP	
YS	
EL2	
RA	
BH	
RH	

DO NOT SCALE DRAWING
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ON DECIMALS ±
FRACTIONS ± ANGLES ±

ORIGINAL DATE OF DRAWING
8 DEC 1961

DRAFTSMAN	CHECKER
ENGR	ENGR
ENGR	ENGR

CODE IDENT NO 19200

AK	AK
SHEET 1	SHEET 1
REVISION LAST SHEETS	

U S ARMY ARMAMENT RESEARCH AND DEVELOPMENT COMMAND
DOVER, NEW JERSEY 07801

PART NO. 8861213

~~U.S. ARMY ARMAMENT COMMAND~~
~~PICATINNY ARSENAL, DOVER, NEW JERSEY 07806~~

BOX, WIREBOUND, PACKING
AMMUNITION FOR ARTILLERY
TYPE OR ROCKET FUZES

SIZE	~~CODE IDENT NO~~	DRAWING NO
C	~~19203~~	8861213

SCALE | UNIT WT | SHEET 1 OF 2

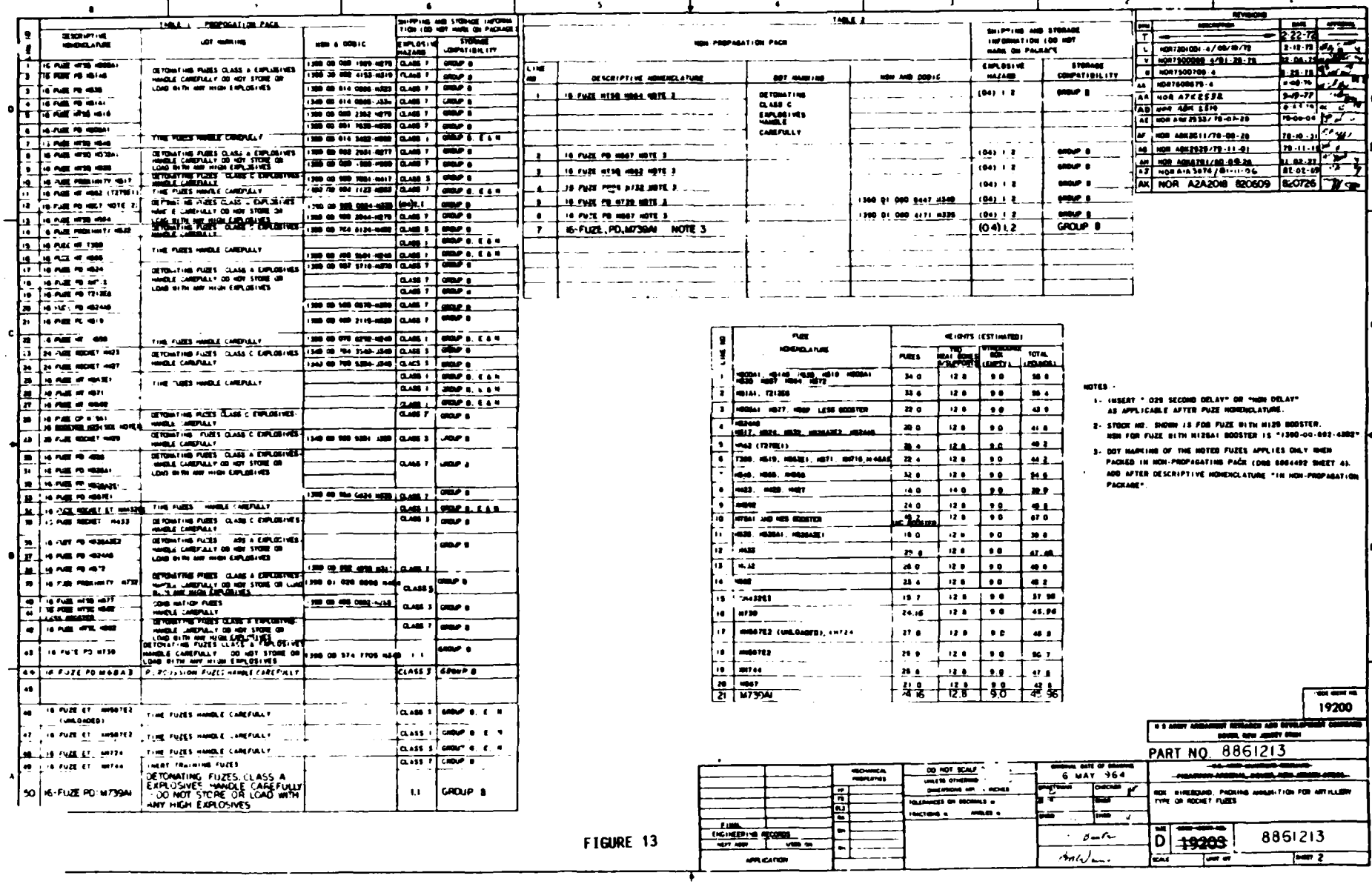


TABLE 1 PROPAGATION PACK

LINE NO	DESCRIPTIVE NOMENCLATURE	DOT MARKING	NSN & DODIC	SHIPPING AND STORAGE INFORMATION (DO NOT MARK ON PACKAGE) EXPLOSIVE HAZARD	STORAGE COMPATIBILITY
1	16 FUZE M750 M904A1	DETONATING FUZES CLASS A EXPLOSIVES HANDLE CAREFULLY DO NOT STORE OR LOAD WITH ANY HIGH EXPLOSIVES	1390 00 1001 1909 M270	CLASS 7	GROUP B
2	16 FUZE PD M546		1390 00 1002 4153 M319	CLASS 7	GROUP B
3	16 FUZE PD M539		1390 00 014 0886 M323	CLASS 7	GROUP B
4	16 FUZE PD M541		1340 00 014 0886 M334	CLASS 7	GROUP B
5	16 FUZE M750 M516		1390 00 1001 2362 M270	CLASS 7	GROUP B
6	16 FUZE PD M908A1		1390 00 001 9539 M335	CLASS 7	GROUP B
7	16 FUZE M750 M546	TIME FUZES HANDLE CAREFULLY	1390 00 014 3402 M335	CLASS 1	GROUP D, E & N
8	16 FUZE M750 M720A1	DETONATING FUZES CLASS A EXPLOSIVES HANDLE CAREFULLY DO NOT STORE OR LOAD WITH ANY HIGH EXPLOSIVES	1390 00 1002 2981 M277	CLASS 7	GROUP B
9	16 FUZE M750 M588		1390 00 1001 1988 M588	CLASS 7	GROUP B
10	16 FUZE PRECAUTY M517	DETONATING FUZES CLASS C EXPLOSIVES HANDLE CAREFULLY	1390 00 1002 1984 M617	CLASS 5	GROUP B
11	16 FUZE MT M582 (T270E1)	TIME FUZES HANDLE CAREFULLY	1390 00 1002 1123 M582	CLASS 7	GROUP D, E & N
12	16 FUZE PD M567 NOTE 2	DETONATING FUZES CLASS A EXPLOSIVES HANDLE CAREFULLY DO NOT STORE OR LOAD WITH ANY HIGH EXPLOSIVES	1390 00 [illegible] M335	CLASS 1	GROUP D
13	16 FUZE M750 M564		1390 00 1002 2964 M270	CLASS 7	GROUP B
14	16 FUZE PRECAUTY M582	DETONATING FUZES CLASS C EXPLOSIVES HANDLE CAREFULLY	1390 00 764 8134 M582	CLASS 5	GROUP B
15	16 FUZE MT T360	TIME FUZES HANDLE CAREFULLY		CLASS 1	GROUP D, E & N
16	16 FUZE MT M565		1390 00 002 5401 M340	CLASS 1	GROUP D, E & N
17	16 FUZE PD M524	DETONATING FUZES CLASS A EXPLOSIVES HANDLE CAREFULLY DO NOT STORE OR LOAD WITH ANY HIGH EXPLOSIVES	1390 00 1007 5710 M270	CLASS 7	GROUP B
18	16 FUZE PD M[illegible]			CLASS 7	GROUP B
19	16 FUZE PD T212E2			CLASS 7	GROUP B
20	16 FUZE PD M524A2		1390 00 1002 0870 M270	CLASS 7	GROUP B
21	16 FUZE PD M519		1390 00 002 2110 M335	CLASS 7	GROUP B
22	16 FUZE MT M565	TIME FUZES HANDLE CAREFULLY	1390 00 002 5710 M340	CLASS 1	GROUP D, E & N
23	24 FUZE ROCKET M423	DETONATING FUZES CLASS C EXPLOSIVES HANDLE CAREFULLY	1340 00 764 3140 M340	CLASS 5	GROUP B
24	24 FUZE ROCKET M427		1340 00 700 5384 M340	CLASS 5	GROUP B
25	16 FUZE MT M565A1	TIME FUZES HANDLE CAREFULLY		CLASS 1	GROUP D, E & N
26	16 FUZE MT M571			CLASS 1	GROUP D, E & N
27	16 FUZE MT M582			CLASS 1	GROUP D, E & N
28	16 FUZE CP M 561	DETONATING FUZES CLASS C EXPLOSIVES HANDLE CAREFULLY		CLASS 7	GROUP B
29	20 FUZE ROCKET M409	DETONATING FUZES CLASS C EXPLOSIVES HANDLE CAREFULLY	1340 00 000 9884 M409	CLASS 3	GROUP B
30	16 FUZE PD M528	DETONATING FUZES CLASS A EXPLOSIVES HANDLE CAREFULLY DO NOT STORE OR LOAD WITH ANY HIGH EXPLOSIVES		CLASS 7	GROUP B
31	16 FUZE PD M528A1				
32	16 FUZE PD M564A1		1390 00 [illegible] M564	CLASS 7	GROUP B
34	16 FUZE ROCKET ET M577E2	TIME FUZES HANDLE CAREFULLY		CLASS 1	GROUP D, E & N
35	11 FUZE ROCKET M433	DETONATING FUZES CLASS C EXPLOSIVES HANDLE CAREFULLY		CLASS 3	GROUP B
36	16 FUZE PD M524A2	DETONATING FUZES CLASS A EXPLOSIVES HANDLE CAREFULLY DO NOT STORE OR LOAD WITH ANY HIGH EXPLOSIVES			GROUP B
37	16 FUZE PD M524B				
38	16 FUZE PD M572		1390 00 002 4898 M34[illegible]	CLASS 1	
39	16 FUZE PRECAUTY M732	DETONATING FUZES CLASS A EXPLOSIVES HANDLE CAREFULLY DO NOT STORE OR LOAD WITH ANY HIGH EXPLOSIVES	1390 01 020 6898 M564	CLASS 5	GROUP B
40	16 FUZE M750 M577		1390 00 002 0882 M340	CLASS 3	GROUP B
41	16 FUZE M750 M582	TIME FUZES HANDLE CAREFULLY			
42	16 FUZE M750 M582	DETONATING FUZES CLASS A EXPLOSIVES HANDLE CAREFULLY DO NOT STORE OR LOAD WITH ANY HIGH EXPLOSIVES		CLASS 7	GROUP B
43	16 FUZE PD M739	DETONATING FUZES CLASS A EXPLOSIVES HANDLE CAREFULLY DO NOT STORE OR LOAD WITH ANY HIGH EXPLOSIVES	1390 00 574 7705 M540	1.1	GROUP B
44	16 FUZE PD M68A3	PROPULSION FUZES HANDLE CAREFULLY		CLASS 7	GROUP B
45					
46	16 FUZE ET M582E2 (UNLOADED)	TIME FUZES HANDLE CAREFULLY		CLASS 5	GROUP D, E N
47	16 FUZE ET M582E2	TIME FUZES HANDLE CAREFULLY		CLASS 1	GROUP D E N
48	16 FUZE ET M724	TIME FUZES HANDLE CAREFULLY		CLASS 5	GROUP D, E, N
49	16 FUZE ET M744	INERT TRAINING FUZES		CLASS 7	GROUP B
50	16-FUZE PD M739A1	DETONATING FUZES, CLASS A EXPLOSIVES HANDLE CAREFULLY DO NOT STORE OR LOAD WITH ANY HIGH EXPLOSIVES		1.1	GROUP B

TABLE 2

LINE NO	NON PROPAGATION PACK DESCRIPTIVE NOMENCLATURE	DOT MARKING	NSN AND DODIC	SHIPPING AND STORAGE INFORMATION (DO NOT MARK ON PACKAGE) EXPLOSIVE HAZARD	STORAGE COMPATIBILITY
1	16 FUZE M750 M564 NOTE 2	DETONATING CLASS C EXPLOSIVES HANDLE CAREFULLY		(04) 1.2	GROUP B
2	16 FUZE PD M567 NOTE 3			(04) 1.2	GROUP B
3	16 FUZE M750 M582 NOTE 3			(04) 1.2	GROUP B
4	16 FUZE PRCD PD M732 NOTE 3			(04) 1.2	GROUP B
5	16 FUZE PD M720 NOTE 3		1390 01 000 9447 M340	(04) 1.2	GROUP B
6	16 FUZE PD M567 NOTE 3		1390 01 000 4171 M335	(04) 1.2	GROUP B
7	16-FUZE, PD, M739A1 NOTE 3			(04) 1.2	GROUP B

LINE NO	FUZE NOMENCLATURE	HEIGHTS (ESTIMATED) FUZES	THD. BOSS & SHOULDER	STRENGTHENING SCR. (EMPTY)	TOTAL (ASSEMBLED)
1	M[illegible] M564 M567 M572	34.0	12.8	9.0	55.8
2	M[illegible], T212E2	33.6	12.8	9.0	55.4
3	M[illegible] M577, M582 LESS BOOSTER	22.0	12.8	9.0	43.8
4	M[illegible] M517, M524, M528, M528A1, M564A5	20.0	12.8	9.0	41.8
5	M582 (T270E1)	20.4	12.8	9.0	42.2
6	T360, M519, M564E1, M571, M572, M564A5	22.4	12.8	9.0	44.2
7	M540, M588, M588A	32.8	12.8	9.0	54.6
8	M423, M409 M427	14.0	14.0	9.0	32.9
9	M[illegible]	24.0	12.8	9.0	45.8
10	M739A1 AND M55 BOOSTER	32.0	12.8	9.0	57.0
11	M528, M528A1, M528A2E1	18.0	12.8	9.0	39.8
12	M433	29.8	12.8	9.0	47.68
13	M[illegible]	26.0	12.8	9.0	48.8
14	M588	23.4	12.8	9.0	45.2
15	M[illegible]	19.7	12.8	9.0	37.98
16	M739	24.16	12.8	9.0	45.96
17	M582E2 (UNLOADED), M724	27.8	12.8	9.0	48.8
18	M582E2	29.9	12.8	9.0	50.7
19	M744	28.8	12.8	9.0	47.8
20	M567	21.0	12.8	9.0	42.8
21	M739A1	AS 16	12.8	9.0	45.96

NOTES:

1. INSERT " .025 SECOND DELAY" OR "NON DELAY" AS APPLICABLE AFTER FUZE NOMENCLATURE.
2. STOCK NO. SHOWN IS FOR FUZE WITH M126 BOOSTER. NSN FOR FUZE WITH M126A1 BOOSTER IS "1390-00-002-4882"
3. DOT MARKING OF THE NOTED FUZES APPLIES ONLY WHEN PACKED IN NON-PROPAGATING PACK (DOD 8864492 SHEET 4). ADD AFTER DESCRIPTIVE NOMENCLATURE "IN NON-PROPAGATION PACKAGE".

REVISIONS			
DIN	DESCRIPTION	DATE	APPROVED
T	[illegible]	2-22-76	
L	NOR/ADM 4/08/10/72	8-10-73	
V	NOR/ADM 4/01-20-73	10-04-73	
U	NOR/ADM 4	3-25-75	
AA	NOR ADM [illegible]	4-10-76	
AA	NOR ATKESSR	3-9-77	
AB	NOR ADM ESM	6-21-78	
AE	NOR ADM 2930/78-01-20	78-04-04	
AF	NOR ADM 2811/78-08-20	78-10-31	
AG	NOR ADM 2929/79-11-01	79-11-16	
AH	NOR ADM [illegible]	81-02-23	
AJ	NOR ADM 3474/81-11-06	81-12-09	
AK	NOR A2A2048 820609	82-0726	

			19200
			PART NO. 8861213
			NOR SHREDDING, PACKING ANNULATION FOR ARTILLERY TYPE OR ROCKET FUZES
			SIZE D, 19203, 8861213, SHEET 2

FIGURE 13

LTR	DESCRIPTION	DATE	APPROVAL
L	EOPA 55883-4/5-2-69	5-2-69	
M	EOPA56563-4/9-12-69	9-12-69	
N	ERA7000033-4	4/27/70	
P	NOR72010014/09-19-72	2-12-73	
R	NOR 750080-4/01-28-75	7-6-75	
S	NOR76006754	11-18-76	
T	NOR A985008 (79-01-25)	79-12-21	

LTR	DESCRIPTION	DATE	APPROVAL
C		9-1-65	
D	EOPA-[illegible]	11-18-66	
E	EOPA-[illegible]	3-6-66	
F	EOPA-45598/7-20-66	7-20-66	
G	EOPA-45155/10-21-66	10-21-66	
H	EOPA-45925 / 12-14-66	12-14-66	
J	EOPA 47728-4 / 4-17-67	7-17-67	
K	EOPA 54056-4 / 3-17-68	3-17-68	

LIST OF PARTS

LINE NO	NAME OF PART	NO REQD	MATERIAL KIND	MATERIAL GRADE	DRAWING OR SPEC NUMBER	REMARKS
1	BOX, PACKING	1	WOOD	TYPE II, CL 2	PPP-B-587	B
2	CONNECTOR	3	STEEL	MEDIUM DUTY FINISH A OR C	QQ-S-781	C,D
3						
4	SLEEVE	36	FIBERBOARD	B FLUTE	PPP-F-320	A
5	SPACER	A	CHIPBOARD		COMMERCIAL	
6	STRAPPING	2	STEEL	FINISH 1 OR C	QQ-S-781	C,D
7	STRIP, SEALING	36	GUMMED PAPER TAPE	TYPE I OR II CLASS A	PPP-T-45	
8						
9						
10						
11						
12						
13						
14						
15						

A- TYPE CF, CLASS-DOMESTIC, VARIETY SW, GRADE 125.
B- FABRICATE PER SPECIFICATION EXCEPT AS SHOWN ON DETAILS.
C- REGULAR DUTY, CLASS-1 STRAPPING.
D- FINISH-C, STRAPPING IS NOT INTENDED FOR LONG TERM STORAGE.

BOX, PACKING
37. ± 3/8 x 15 3/16 INSIDE DIMENSIONS
TOLERANCE ON INSIDE DIMENSIONS ± 1/8
ADVISORY 0.0. 38. ± 3/8 x 21 1/2

SPACER
37. - 1/8 ± 3/8. - 1/8 x 1/16 THICK

STRAPPING
3/4 x .023 x 120. LONG ADVISORY

CONNECTOR
2 1/2 MIN PER 3/4 STRAPPING

STRIP, SEALING
2. - 1/8 x 7 1/4 - 1/8

PACKING INSTRUCTIONS

WITH SLEEVE PLACED AROUND SIDES AND ENDS OF INNER BOXES, PACK 36 BOXES IN TWO LAYERS, EACH LAYER IN A 6. x 3. PATTERN, WITH A SPACER BETWEEN LAYERS.
ADD SPACERS ON TOP AS REQUIRED FOR TIGHT PACKING.
LOOSELY COVER IN PLACE WITH THE 5 STRINGERS DOWNWARD.
CLOSE AND SEAL THE BOX IN ACCORDANCE WITH FIGURE 9 OF SPECIFICATION PPP-B-636
NAILS ARE NOT TO BE USED IN THE ASSEMBLY OF THE BOX.
APPLY ONE STRAP WIDTHWISE AROUND CENTER OF BOX SO THAT STRAP RESTS ADJACENT TO AND PARALLEL WITH CENTER STRINGER AND UNDERNEATH DECKBOARDS ENCIRCLING SIDES AND TOP OF BOX.
APPLY ONE STRAP LENGTHWISE AROUND CENTER OF BOX IN A SIMILAR MANNER WITH THE STRAP RESTING BETWEEN DECKBOARDS AND UNDERNEATH THE INNER BOXES.
SECURE STRAPS WITH CONNECTORS.
FOR CLOSING, SEALING AND REPAIR INSTRUCTIONS SEE DRAWING C8796522.

MARKING INSTRUCTIONS

THE BOX SHALL BE MARKED IN ACCORDANCE WITH DRAWING C8796522.
THE DOT MARKING SHALL BE AS PERTINENT:- (SEE TABLE).
THE DESCRIPTIVE NOMENCLATURE SHALL BE AS SHOWN IN TABLE ABOVE.
THE CUBICAL DISPLACEMENT SHALL BE:- "18.5"

	FUZE DESCRIPTIVE NOMENCLATURE	UNIT WEIGHT (POUNDS AND DECIMALS)	APPROX WT OF PACKED PALLET (POUNDS)	DOT MARKING (SEE NOTE 1)
1	288-FUZE MTSQ M508A1	23.2	896.	SEE NOTE 3
2	288-FUZE PD M48B3	23.2	896.	SEE NOTE 2
3	288-FUZE PD M535	23.2	896.	
4	288-FUZE PD M581A1	23.0	888.	
5	288-FUZE MTSQ M510	23.2	896.	SEE NOTE 3
6	288-FUZE PD M540A1	23.2	896.	SEE NOTE 2
7	288-FUZE MTSQ M540A1	17.2	660.	
8	288-FUZE MTSQ M520	23.2	896.	SEE NOTE 3
9	288-FUZE PROXIMITY M517	16.2	644.	SEE NOTES 3 AND 6
10	288-FUZE MTSQ M540	22.6	875.	SEE NOTE 4
11	288-FUZE M524	16.2	644.	SEE NOTE 2
12	288-FUZE MT M548 (T375E1)	19.4	759.	SEE NOTE 4
13	288-FUZE PD M557	23.2	896.	SEE NOTE 2
14	288-FUZE PROXIMITY M538	16.2	644.	SEE NOTES 3 AND 6
15	288-FUZE MTSQ M564A	23.2	896.	SEE NOTE 5
16	288-FUZE MT T369	17.4	687.	SEE NOTE 5
17	288-FUZE MT M564	22.6	875.	
18	288-FUZE MT M538A5	16.2	644.	SEE NOTE 2
19	288-FUZE PD T213E6	23.0	889.	SEE NOTE 3
20	288-FUZE PD XM716	17.4	687.	SEE NOTE 1
21	288-FUZE PD M519	17.4	687.	SEE NOTE 1
22	288-FUZE MT XM558	22.6	875.	SEE NOTE 4
23	432-FUZE ROCKET M429	15.2	608.	SEE NOTES 3 AND 6
24	432-FUZE ROCKET M427	15.2	608.	
25	288-FUZE MT M563E1	17.4	687.	SEE NOTE 5
26	288-FUZE MT M571	17.4	687.	
27	288-FUZE MT XM552	18.2	716.	
28	360-FUZE ROCKET M429	15.2	608.	SEE NOTES 3 AND 6
29	288-FUZE TIME XM561E1	17.2	680.	SEE NOTE 5
30	288-FUZE PD M526	15.2	608	SEE NOTE 1
31	288-FUZE PD M526A1	15.2	608.	SEE NOTE 1
32	288-FUZE PD M526A2E1	15.2	608.	SEE NOTE 1
33	288-FUZE ART ET XM532E1	14.06	567	SEE NOTE 3
34	288-FUZE, ROCKET; M433	19.0	755	SEE NOTES 3 & 6
35	[illegible]	[illegible]	[illegible]	[illegible]
36	288-FUZE PD M557E1	23.2	896	SEE NOTE 2
37	288-FUZE PD M526A2E2	16.2	644.	SEE NOTE 1
38	288-FUZE MT M524A6	16.2	644.	SEE NOTE 2
39	288-FUZE PD M572	23.2	[illegible]	SEE NOTE 1
40	288-FUZE MTSQ, M[illegible]	[illegible]	[illegible]	SEE NOTE 7
41	288-FUZE MTSQ, M[illegible]	17.3	705.	SEE NOTE 8
42	[illegible]	16.95	680.0	[illegible]

NOTES:-
1- UNLESS OTHERWISE SPECIFIED
WHEN FUZES ARE SHIPPED WITH BOOSTERS THE FOLLOWING DOT MARKING SHALL APPLY:-
"DETONATING FUZES CLASS A EXPLOSIVES - HANDLE CAREFULLY - DO NOT STORE OR LOAD WITH ANY HIGH EXPLOSIVES."
2- WHEN FUZES ARE SHIPPED WITHOUT ANY EXPLOSIVE COMPONENTS ADD "METAL PARTS ASSEMBLY (MAT" AFTER DESCRIPTIVE NOMENCLATURE SHOWN.
THE DOT MARKING TO BE APPLIED SHALL BE:-
"NON-EXPLOSIVE AMMUNITION".
3- WHEN FUZES ARE SHIPPED WITH DETONATORS AND/OR DELAYS BUT WITHOUT BOOSTER ADD "WITHOUT BOOSTER" AFTER DESCRIPTIVE NOMENCLATURE SHOWN.
THE DOT MARKING TO BE APPLIED SHALL BE:-
"PERCUSSION FUZES - HANDLE CAREFULLY".
4- FUZE DESIGN DOES NOT INCLUDE A BOOSTER ASSEMBLY.
THE DOT MARKING TO BE APPLIED SHALL BE:-
"PERCUSSION FUZES - HANDLE CAREFULLY".
USE DESCRIPTIVE NOMENCLATURE SHOWN IN TABLE.
5- THE DOT MARKING TO BE APPLIED SHALL BE:-
"TIME FUZES - HANDLE CAREFULLY".
6- WHEN THESE FUZES ARE SHIPPED WITH BOOSTERS THE FOLLOWING DOT MARKING SHALL APPLY -
"DETONATING FUZES, CLASS C EXPLOSIVES-HANDLE CAREFULLY"
THE DOT MARKING TO BE APPLIED SHALL BE "COMBINATION FUZES-HANDLE CAREFULLY".
7- WHEN FUZES ARE SHIPPED WITH BOOSTER, USE NOMENCLATURE IN NOTE 1. WHEN SHIPPED WITHOUT BOOSTER USE NOMENCLATURE OF NOTE 2 AND APPLY LESS BOOSTER AFTER DESCRIPTION NOMENCLATURE.
WHEN FUZES ARE SHIPPED WITHOUT [illegible] THE FOLLOWING DOT MARKING SHALL APPLY - "DETONATING FUZES, CLASS C EXPLOSIVES-HANDLE CAREFULLY"

FOR CLARIFICATION OF LEVEL A, B AND C SHIPMENT OF FUZES, SEE SPEC MIL-P-[illegible]A(2).

FOR ASSOCIATED LIST SEE 8886458.

FOR INNER BOX, SEE DRAWING 8886458. PART NO. 8886458

FOR OVERPLANT SHIPMENT SEE 7.

[illegible]	[illegible]		
[illegible]	[illegible]		
[illegible]	[illegible]		

FIPL

SEE ENGINEERING RECORDS

NEXT ASSY	USED ON

APPLICATION

DO NOT APPLY PART NO

PHYSICAL PROPERTIES: YP, TS, EL2, RA, BH, RH

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON FRACTIONS DECIMALS ANGLES
MATERIAL
HEAT TREATMENT
FINAL PROTECTIVE FINISH

ORIGINAL DATE OF DRAWING 10 MAR 66
DRAWN [illegible] CHECKED [illegible]
ENGR APPR [illegible] MFG APPR [illegible]
SUBMITTED [illegible] DATE
APPROVED [illegible] DATE

BOX, PALLET TYPE, WIREBOUND, PACKING, AMMUNITION FOR ARTILLERY TYPE AND ROCKET FUZES (WITHIN REAR BOX)

U.S. ARMY ARMAMENT RESEARCH AND DEVELOPMENT COMMAND, DOVER, N.J. 07801

CODE IDENT NO. [illegible] 19200

SCALE UNIT WT

~~PICATINNY ARSENAL~~
~~ORDNANCE CORPS~~
~~DEPT OF THE ARMY~~
~~DOVER, N.J.~~ 07801

SIZE C | 8886458 | SHEET 1 OF 2

FIGURE 14

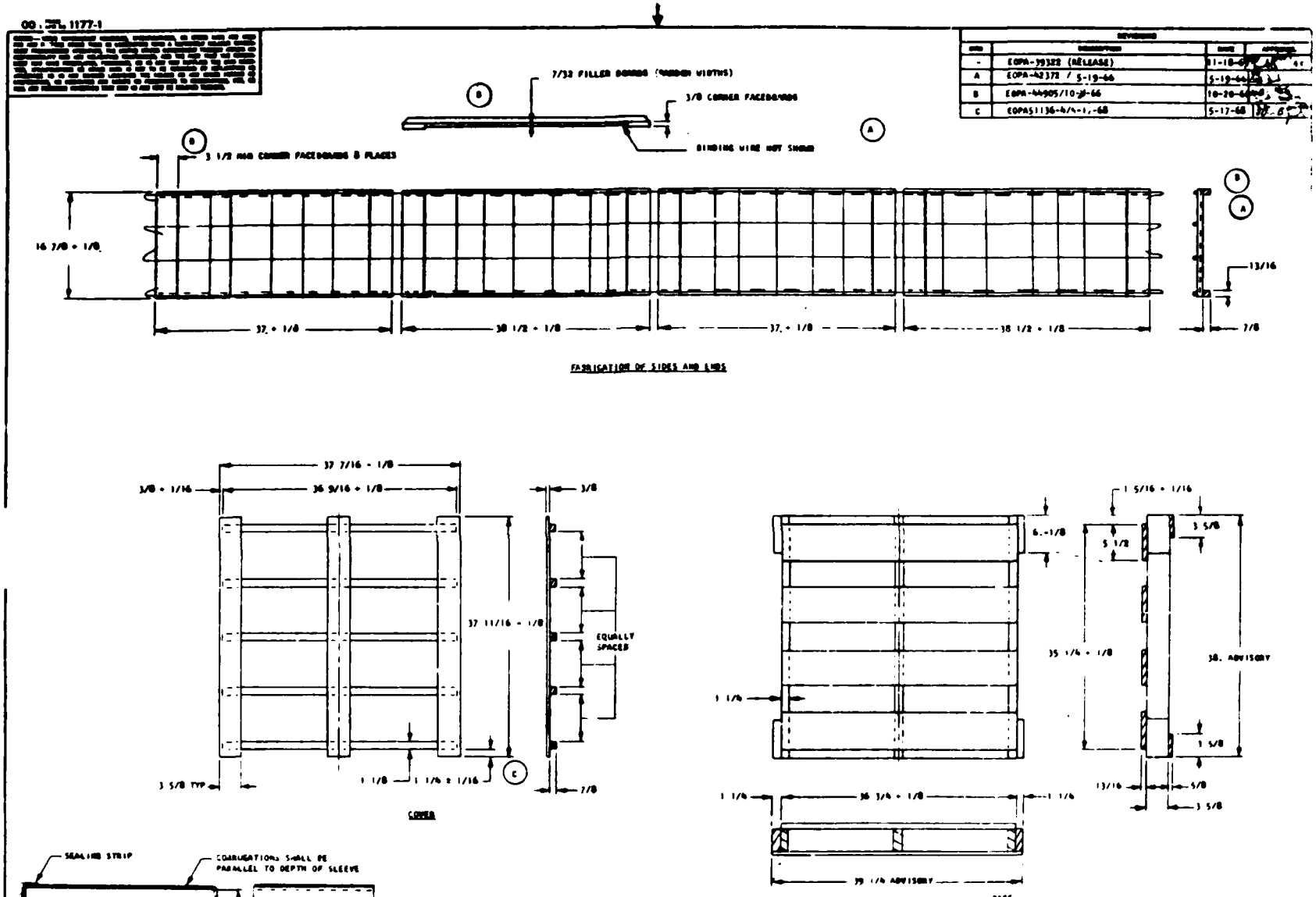


FIGURE 15

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
-	EOPA-79322 (RELEASE)	11-18-65	
A	EOPA-42372 / 5-19-66	5-19-66	
B	EOPA-66505/10-28-66	10-28-66	
C	EOPA51136-4/4-1,-68	5-17-68	

(B) FOR ASSOCIATED LIST SEE 8886458

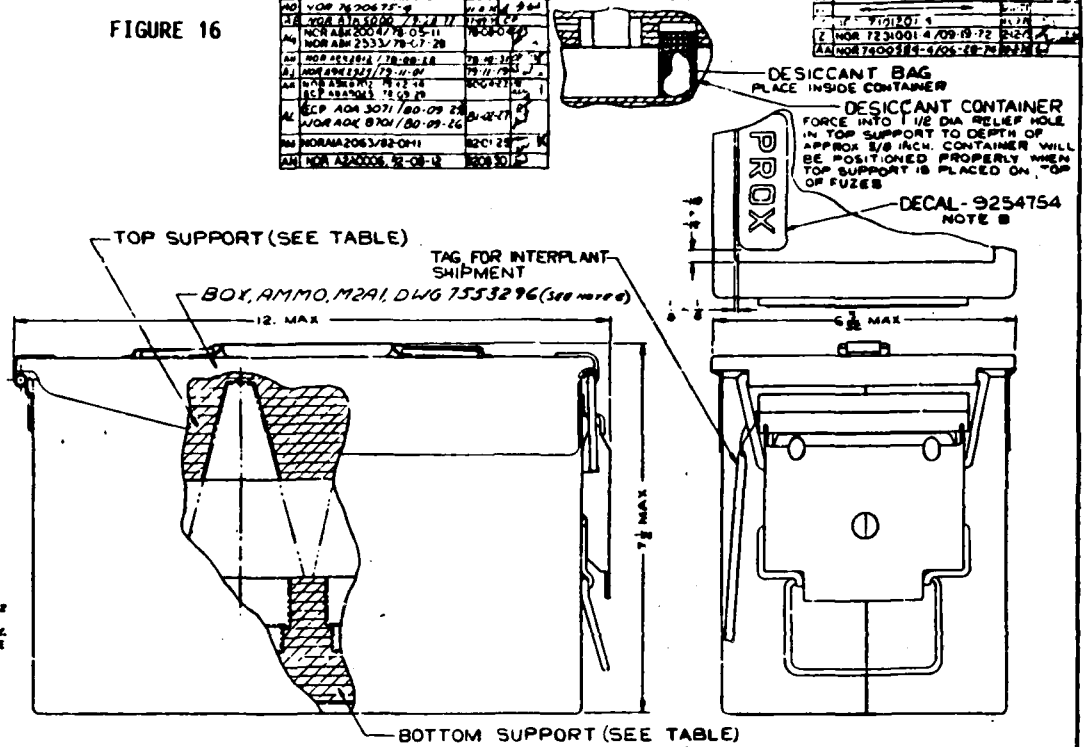
ORDNANCE PART NO. 8886458

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS ± 1/32 DECIMALS ANGLES	ORIGINAL DATE OF DRAWING 18 NOV 65	BOX, PALLET TYPE, WIREBOUND, PACKING, AMMUNITION FOR ARTILLERY TYPE AND ROCKET FUZES (WITHIN M2A1 BOX) (A)	PICATINNY ARSENAL ORDNANCE CORPS DEPT OF THE ARMY DOVER, NEW JERSEY
MATERIAL	SUBMITTED	CODE IDENT NO. 19203	CODE IDENT NO. 8886458
HEAT TREATMENT	APPROVED	SCALE / UNIT WT	SIZE C SHEET 2 OF 2
FINAL PROTECTIVE FINISH			

PACKAGING COMPONENTS

LINE NO	NAME OF PART	NO. REQD	MATERIAL: KIND	MATERIAL: GRADE	DRAWING OR SPEC NUMBER	REMARKS
1	ASSEMBLY		SEE TABLE, SHEET 2			
2	FILLER, BOTTOM	A	FILLER SHEET FORM		[illegible]	
3	BOX, AMMO, M2AI, DWG 7553296	1			7553296	G,M
4	BAG, DESICCANT	1	1 UNIT	TYPE I	MIL-D-3464	F,N
5	CONTAINER, DESICCANT	1			8864492	L
6	DECAL	1			9254754	B
7	SUPPORT, BOTTOM	1	SEE TABLE, SHEET 2			
8	SUPPORT, TOP	1	SEE TABLE, SHEET 2			
9	TAG FOR INTERPLANT SHIPMENT	1	MANILA PAPER	TYPE B, CL 1	UU-T-81	C,D,S
10	TUBE	1			8938323	A
11		-	MK, STENCIL, WHITE NO. 37875	TYPE I	TT-I-1795	E
12		-	INK, STENCIL, BLACK NO. 37038	TYPE I	TT-I-1795	E

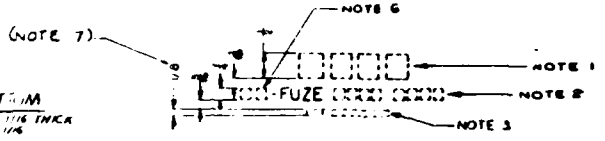
FIGURE 16

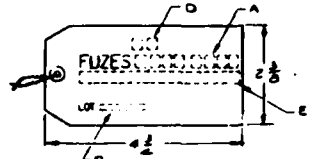


A-AS REQUIRED
B-APPLY DECAL TO TOP OF BOX WHEN PACKING FUZE, PROXIMITY, M517, M532, XM423 OR M732 SEE ASSEMBLY FOR LOCATION
C-TO BE FURNISHED BY THE MANUFACTURER. TO BE USED FOR INTERPLANT SHIPMENT ONLY.
D-TAG SHALL BE FURNISHED WITH A METAL EYELET AND EITHER COTTON TWINE OR WIRE STRINGING PER SPECIFICATION. GRADES 20WR, 40SU, 18WR 1S JU AND 13SU SHALL APPLY.
E-ALTERNATIVE MATERIAL:- INK IN ACCORDANCE WITH DRAWING C9211788.
F-LOADER SHALL REPLACE OR REACTIVATE BAG IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS ON BAG.
G-ALTERNATIVE SHIPPING CONTAINER FOR FUZE, PD DWG 9817658.
H-SPECIFICATION MIL-B-3060 SHALL APPLY FOR THE M501 BOX.

P- FOR NON-PROPAGATING PACK AND INSTRUCTIONS, SEE SHEET 4.
R- REQUIRED ONLY FOR NON-PROPAGATING PACK, SEE SHEET 4.
S- SPLIT INTERPLANT SHIPMENT TAG FOR FUZES HAVING INDIVIDUAL LOT MARKING OR NOMENCLATURE AND MARKING APPEARS ON OUTER BOX.

SHEET #	AN	AN	AN	AN
	SHEET 3	SHEET 2	SHEET 1	
	REVISION STATUS OF SHEETS			





MARKING INSTRUCTIONS FOR LOADER

THE LOADER SHALL APPLY MARKING WITH WHITE STENCIL INK. MARKING SHALL BE APPLIED ON ONE SIDE OF BOX AND SHALL BE READ FROM TOP TO BOTTOM.

NOTES:
1-INSERT DEPARTMENT OF DEFENSE IDENTIFICATION CODE (SEE TABLE)
2-INSERT DESCRIPTIVE NOMENCLATURE (SEE TABLE (NOTE E))
3-INSERT LOT NUMBER
4-
5-MARK PACKAGES WITH "DESICCANT-DO NOT OPEN UNTIL READY FOR USE OR INSPECTION" ON TOP OF BOX IN ANY CONVENIENT UNOBSTRUCTED LOCATION. SIZE OF LETTERS TO BE APPROX 1/4 INCH HIGH EXCEPT DO NOT OPEN LETTERS TO BE APPROX 3/8 INCH HIGH.
6-INSERT LOT NO. (SEE TABLE)
7-ALTERNATIVE: LETTERS 3/16 OF LOT NO AND DATE (M60) MAY BE 3/16
8-FOR FUZES PACKED IN NON-PROPAGATION PACK (SHEET 4) ADD AFTER DESCRIPTIVE NOMENCLATURE "IN NON PROPAGATION PACKAGE".

K-WHEN [illegible] AND 9232144 ARE USED, SEE ALTERNATIVE ASSEMBLY SHEET 3
L-OMIT [illegible] WHEN USING [illegible] SUPPORTS, 9232149 AND 9232148
M-WHEN USING [illegible] AND 9232148 SEE ALTERNATIVE PACKING INSTRUCTIONS, SHEET 3.
N-OMIT DESICCANT BAG WHEN PACKING FUZES M739, M739A1, M557, M577, M572 AND M564.

PACKING INSTRUCTIONS (SEE NOTE M)P

ALL MATERIAL SHALL BE THOROUGHLY DRY AT TIME OF PACKING. ALL AMMUNITION BOXES AND FUZES SHALL BE VISUALLY INSPECTED AT TIME OF PACKING TO ASSURE THAT THERE IS NO CONDENSATE AND/OR SURFACE MOISTURE.
INSERT DESICCANT BAG INTO DESICCANT COUTAINER AND PLACE IN TOP SUPPORT AS SHOWN.
PACK FUZES AS SHOWN ADD FILLERS AS REQUIRED FOR TIGHT PACKING.
THE CONTAINER SHALL WITHSTAND AIR LEAKAGE TEST
ACCEPTABLE REQUIREMENTS: MAXIMUM [illegible] OF CONTAINER IS 0.4 ATMOSPHERIC CC PER SECOND WHEN A TO PSI GAGE PRESSURE DIFFERENTIAL VACUUM IS APPLIED.

SEE SEPARATE PARTS LIST 8864492
FOR CLARIFICATION OF LEVEL A, B, AND C SHIPMENT OF FUZES SEE SPECIFICATION MIL-F-[illegible]
FOR INTERPLANT SHIPMENT USE PALLET DWG 8864[illegible]
FOR OVERSEAS SHIPMENT USE WIREBOUND BOX [illegible]

TAG, FOR INTERPLANT SHIPMENT

PRINT OR STAMP TAG WITH BLACK INK AS SHOWN. SIZE OF LETTERS AND FIGURES FOR NOMENCLATURE 1/4 INCH MIN, FOR LOT 1/8 INCH MIN.
THE TAG SHALL BE ATTACHED SECURELY TO ANY CONVENIENT LOCATION ON OUTSIDE OF BOX.

NOTES:
A-INSERT DESCRIPTIVE NOMENCLATURE AS APPLICABLE.
B-INSERT LOT NUMBER
C-
D-INSERT [illegible] AS APPLICABLE (SEE TABLE)
E-INSERT [illegible] AS APPLICABLE

CODE IDENT NO	PART NO.
19200	8864492

FOX AMMO METAL FOR ARTILLERY TYPE AND ROCKET FUZES

SIZE	CODE IDENT NO	DWG NO
E	19203	8864492

QTY PER	DESCRIPTIVE NOMENCLATURE	CODIC	ASSEMBLY ORDNANCE PART NO	TOP SUPPORT ORDNANCE PART NO	BOTTOM SUPPORT ORDNANCE PART NO
1	A-FUZE MTSQ M50CAI	N275	8864492-1	9232149	9232148
2	A-FUZE PD M51A8	N319	8864492-1	9232149	9232148
3	A-FUZE PD M335	N323	8864492-1	9232149	9232148
4	A-FUZE PD M81A1	J334	8864492-1	9232149	9232148
5	A-FUZE MTSQ M518	N279	8864492-1	9232149	9232148
6	A-FUZE PD M502AI	N326	8864492-1	9232149	9232148
7	A-FUZE MTSQ M502AI	N277	8864492-1	9232149	9232148
8	A-FUZE MTSQ M520	N280	8864492-1	9232149	9232148
9	A-FUZE PROXIMITY M517	N417	8864492-2	8864495	9232149
10	A-FUZE MTSQ M548	N282	8864492-1	9232149	9232149
11	A-FUZE PD M524	N308	8864492-4	8864493	8864497
12	A-FUZE MT M562 (T275E1)	N283	8864492-5	9232149	8864549
13	A-FUZE PD M847	N335	8864492-1	9232149	9232148
14	A-FUZE PROXIMITY M532	N402	8864492-6	8864814	8864496
15	A-FUZE MTSQ M564	N278	8864492-1	9232149	9232148
16	A-FUZE MT T365		8864492-7	8864494	8865055
17	A-FUZE MT M365	N248	8864492-1	9232149	9232148
18	A-FUZE PD M526	N309	8864492-12	9224020	8864496
19	A-FUZE PD T212E6		8864492-1	9232149	9232148
20	A-FUZE PD M526AI	N309	8864492-12	9224020	8864496
21	A-FUZE PD M519	N329	8864492-8	8880659	8864496
22	A-FUZE MT XM548	N239	8864492-1	9232149	9232148
23	12-FUZE ROCKET M423	J349	8864492-9	8882441	8882442
24	12-FUZE ROCKET M427	J346	8864492-9	8882441	8882442
25	B-FUZE MT M563E1		8864492-7	8864494	8865055
26	B-FUZE MT M571		8864492-7	8864494	8865055
27	B-FUZE PD M524A5	N308	8864492-4	8864493	8864497
28	B-FUZE MT XM 592		8864492-7	8864494	8865055
29	B-FUZE TIME (M564E1)		9864492-11	9220728	8864496
30	10-FUZE ROCKET M423		8864492-10	9211200	9211201
31	B-FUZE PD M526A2E1	N309	8864492-12	9224020	8864496
32	B-FUZE PD XM746		8864492-8	8880659	8864496
33	A-FUZE PD M55E1	N335	8864492-1	9232149	9232148
34	A-FUZE PD M51A8E1		8864492-13	9224020	8864496
35	8-FUZE ROCKET M433		8864492-14	9224020	8864496
36	B-FUZE PD M524A2	N309	8864492-15	9243495	8864496
37	B-FUZE PD M524A6	N308	8864492-16	9364493	8864497
38	B-FUZE PD M572	N311	8864492-1	9232149	9232148
39	B-FUZE MTSQ M582		8864492-1	9232149	9232149
40	B-FUZE MTSQ M577	N286	8864492-1	9232149	9232149
41	B-FUZE PROX M732		8864492-17	8864494	9326065
42	B-FUZE MTSQ M582 LESS BOOSTER		8864492-1	9232149	9232148
43	A-FUZE TD M739		8864492-1	9232149	9232148
44	B-FUZE PD M434A3	N313	8864492-1	9232149	9232148
45	B-FUZE PROX M732		8864492-17	8864494	9326065
46	B-FUZE ELEC TIME XM564E2 (UNLOADED)		8864492-1	9232149	9232148
47	B-FUZE ELEC TIME XM564E2		8864492-1	9232149	9232148
48	B-FUZE ELEC TIME XM764		8864492-1	9232149	9232148
49	B-FUZE ELEC TIME XM764		8864492-1	9232149	9232148
50	B FUZE PD M739AI		8864492-1	9232149	9232148

* DELETED FOR ARMY STEEL FUZES

LINE NO	DESCRIPTIVE NOMENCLATURE	ASSEMBLY PART NO.	TOP SUPPORT	BOTTOM SUPPORT
1	FUZE MTSQ M567	8864492-19	9298800	9328329
2	FUZE PD M564	8864492-18	9232149	9328329
3	FUZE MTSQ M582	8864492-19	9232149	9328329
4	FUZE PROX M732	8864492-18	9232149	9328329
5	FUZE PD M739	8864492-18	9232149	9328329
6	FUZE PD M557	8864492-18	9232149	9328329
7	FUZE, PD, M739A1	8864492-18	9232149	9328329
8				

TABLE 2
NOMENCLATURE PROPAGATION PACK

LINE NO	LIST OF DRAWINGS	DRAWING NUMBER
1	ASSEMBLY	F8864492
2	BOX, AMMO CAL .50 M1A1	D1353396
3	CONTAINER, DESICCANT	8888050
4	DECAL	8923454
5		
6	SUPPORT, BOTTOM	C8864496
7	SUPPORT, BOTTOM	C8864497
8		
9	SUPPORT, BOTTOM	C8864549
10	SUPPORT, BOTTOM	C8865055
11	SUPPORT, BOTTOM	C8882442
12	SUPPORT, BOTTOM	C9211201
13	SUPPORT, BOTTOM	F9232148
14	SUPPORT, TOP	C8864814
15	SUPPORT, TOP	C8864493
16	SUPPORT, TOP	C8864494
17	SUPPORT, TOP	C8864495
18	SUPPORT, TOP	C8880659
19	SUPPORT, TOP	C8882441
20	SUPPORT, TOP	C9211200
21	SUPPORT, TOP	C9220728
22	SUPPORT, TOP	9224020
23	SUPPORT, TOP	09221492
24	SUPPORT, TOP	09260702
25	SUPPORT, BOTTOM	09266703
26	SUPPORT, TOP	C9293995
27	SUPPORT	09260045
28	SUPPORT, BOTTOM	C9326065
29	TUBE	8932329
30	SUPPORT, TOP	09259800

LINE NO	FUZE NOMENCLATURE	WEIGHTS (ESTIMATED) FUZES	METAL BOX (EMPTY)	SUPPORTS	WRENCH	TOTAL (POUNDS)
1	M500AI, M81A8, M535, M518, M502AI, M520, M587, M562	17.0	5.8	.4		23.2
2	M81A1, T212E6	16.8	5.8	.4		23.0
3	M502AI, XM821E1, M577 M502 LESS BOOSTER	11.0	5.8	.4		17.2
4	M517, M524, M532, M526A2E1, M524A5, M524A6	10.0	5.8	.4		16.2
5	M562 (T275E1)	13.2	5.8	.4		19.4
6	T365 XM716, M519, M563E1 M571	11.2	5.8	.4		17.4
7	M548, M565, XM558, M434A3	16.4	5.8	.4		22.6
8	M423, M427, XM427	9.0	5.8	.4		15.2
9	XM582	12.0	5.8	.4		18.2
10	M526, M526AI, M526A2E1	9.0	5.8	.4		15.2
11	A433	12.8	5.8	.4		19.0
12	M572	17.0	5.8	.4		23.2
13	XM432E1	12.8	5.9	.4		19.2
14	M582	11.7	5.8	.4		17.9
15	M739	12.08	5.9	.4		18.28
16	M739 BODY ASSEMBLY	10.75	5.8	.4		16.95
17	M732	14.0	5.8	.4		20.2
18	XM582E2 XM734 (UNLOADED)	12.5	5.8	.4		18.7
19	XM582E2	14.5	5.8	.4		20.7
20	XM764	13.3	5.8	.4		19.1
21	M567	10.5	5.8	.4		16.7
22	M739A1	12.08	5.9	.4		18.28

LINE NO	CODIC	SPECIFICATION
AG	NOR ARM 2331/78-01-18	78-09-06
AH	NOR 41 E 20-1, 78-08-23	78-10-31
AL	NOR AC 8704/82-09-26	82-09-27
AM	NOR MA 2063/82-09-11	82-09-25
AN	NOR A2A0006, 82-08-12	82-09-30

LINE NO	CODIC	SPECIFICATION
A	EOPA 50505	MIL-A-12560
B	EOPA 44248	
C	EOPA 44648	
D	EOPA 35512	
E	EOPA 37530	
F	EOPA 40046	
G	EOPA 40473	
H	EOPA 42419 8-26-66	
I	EOPA 45544 7-11-25-66	
K	EOPA 47720-6/8-17-67	
	EOPA 51608-5/8-24-68	
M	EOPA 53366-5/ 8-15-69	
V	EOPA 5-3-41/52-69	
P	EOPA 53643-47 9-12-69	
Q	ERA 7000033-6	
S	NOR 7100939-9	
T	NOR 7200186-6	
U	NOR 7201001-4/09-19-72	
AB	NOR 7500050-4/01-23-75	
AC	NOR 7500709-6	
AD	NOR 7600678-6	
AE	NOR A7K 2532	
AF	NOR A7K 8009/9-28-77	

SEE SEPARATE PARTS LIST 8864492
FOR ASSOCIATED

PART NO. 8864492

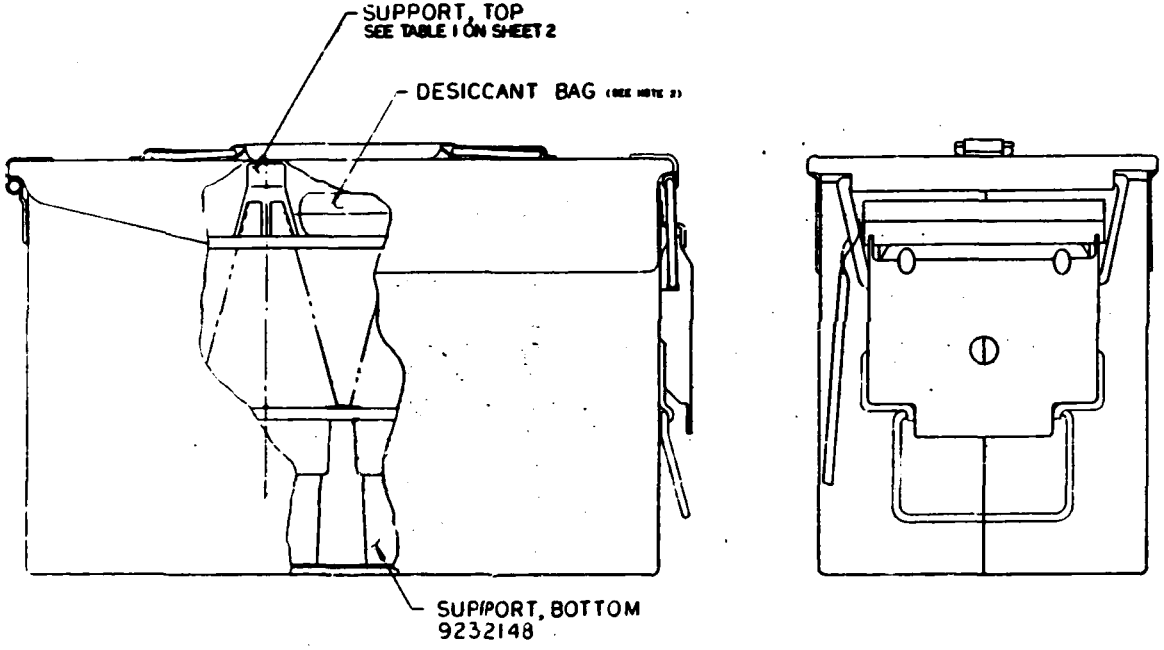
BOX, AMMO, METAL FOR ARTILLERY TYPE AND ROCKET FUZES

19200

8864492

FIGURE 17

DWG	DESCRIPTION	DATE	APPROVAL
-	EOPA51602-4/REV 521-CB	5-21-68	
A	ERR 7100450-4	4-6-71	
B	NOR 7100608-4	6-11-71	
C	NOR72C10094/09-19-72	2-12-73	
AB	NOR7300088-A/1-28-73	3-6-73	
AC	NOR7600675-6	11-10-76	
AD	NOR AQR8823/78-09-18	78-09-18	
AJ	NOR A9K2335/79-11-19	79-11-19	
AK	NOR A3K8702 794244	800422	
AL	NOR AQR8791/80-08-26	81-08-27	
AM	NOR A2A0006, 82-08-12	82-08-30	



PACKING INSTRUCTIONS - USED WITH POLYETHYLENE SUPPORTS

P1- ALL MATERIAL SHALL BE THOROUGHLY DRY AT TIME OF PACKING.
P2- ALL AMMUNITION BOXES AND FUZES SHALL BE VISUALLY INSPECTED AT TIME OF PACKING TO ASSURE THAT THERE IS NO CONDENSATION AND/OR SURFACE MOISTURE.
P3- INSERT BOTTOM SUPPORT, 9232148, INTO BOX. THEN PACK FUZES IN BOTTOM SUPPORT AS SPECIFIED.
P4- PLACE TOP SUPPORT, 9232149 ON FUZES
P5- PLACE DESICCANT BAG ON TOP OF CENTER PORTION OF TOP SUPPORT WITH LENGTH OF BAG PERPENDICULAR TO SUPPORT. (SEE NOTE 2)
P6- BOTTOM FILLER, (SEE SHEET 3) IF REQUIRED, SHALL BE ADDED ON BOTTOM OF BOX ON EACH SIDE OF BOX ORIENTATION TO INSURE TIGHT PACKING
P7- CLOSE AND SEAL CONTAINER. THE CONTAINER SHALL WITHSTAND AN AIR LEAKAGE TEST. SEE SHEET [illegible] OF THIS DRAWING FOR TEST REQUIREMENTS.

STANDARD PACK ASSEMBLY

(USE FOR POLYETHYLENE SUPPORTS ONLY)

NOTES -
1. SPEC MIL-A 2550 APPLIES
2. SEE NOTE "N" ON SHEET 1

FIGURE 18

		MECHANICAL PROPERTIES	UNLESS OTHER DIMENSIONS	ORIGINAL DATE OF DRAWING 21 MAR 68	CODE IDENT NO 19200
		VP	CLEARANCES ON DECIMALS ±	DRAWN	CHECKED
		YS	FRACTIONS ± ANGLES ±	ENGR	ENGR
C88-2-1-3	8734 MEA1	EL	MATERIAL	TRCR	ENGR
NEXT ASSY	USED ON	BA			
APPLICATION		BH	HEAT TREATMENT		
DO NOT	APPLY PART NO	BH	FINAL PROTECTIVE FINISH		

U S ARMY ARMAMENT RESEARCH AND DEVELOPMENT COMMAND
DOVER, NEW JERSEY 07801

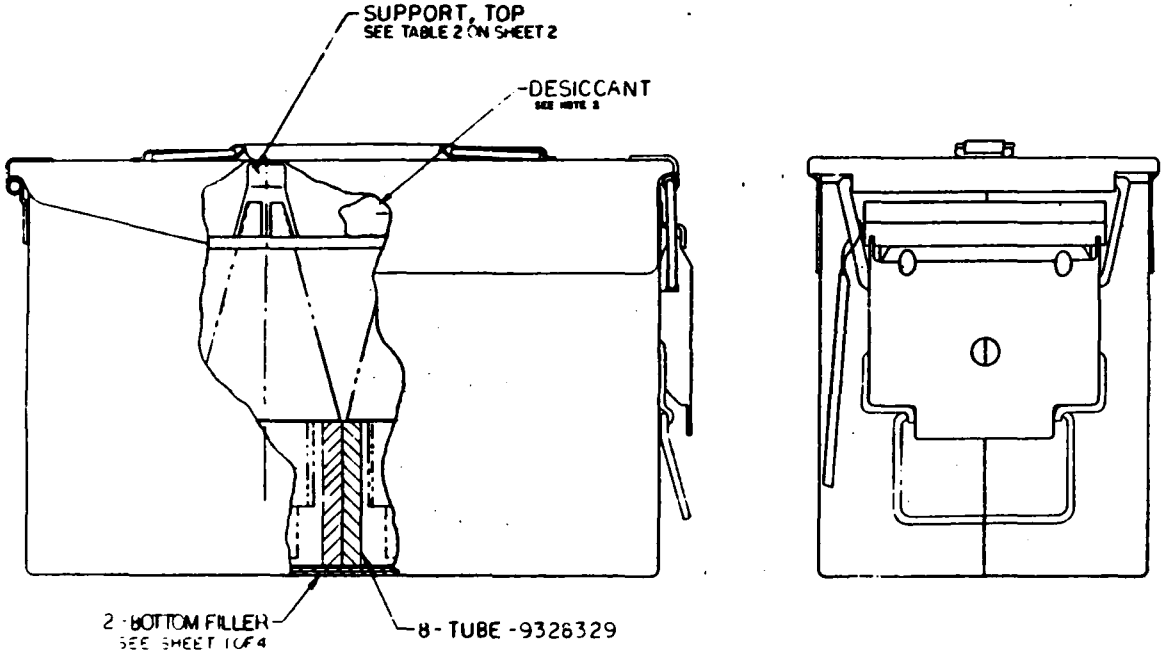
PART NO. 9864492

BOX, AMMO, METAL, FOR ARTILLERY TYPE AND ROCKET FUZES

SIZE D | 19203 | 9864492

SCALE 1/1 | WT | SHEET 3 OF 4

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
AG	ERR ABK 2533 (REL)	78-08-04	
AJ	NOR ABK2525/79-11-01	79-11-19	
AL	NOR ADK0701/80-09-26	81-02-27	
AN	NOR A2A0006, 82-08-12	82-09-30	



NON - PROPAGATION PACK ASSY

PACKING INSTRUCTIONS FOR NON-PROPAGATING PACK

P1- ALL MATERIAL SHALL BE THOROUGHLY DRY AT TIME OF PACKING. MOISTURE CONTENT OF PAPER PRODUCTS TO BE 8% MAXIMUM.

P2- ALL AMMUNITION BOXES AND FUZES SHALL BE VISUALLY INSPECTED AT TIME OF PACKING TO ASSURE THAT THERE IS NO CONDENSATION AND/OR SURFACE MOISTURE.

P3- PLACE 2 BOTTOM FILLERS, ONE ON TOP THE OTHER, ON BOX BOTTOM ON EACH SIDE OF BOX INDENTATIONS. INSERT 8 TUBES IN A 4X2 PATTERN. PACK 8 FUZES WITH BOOSTER OUTBOARD AND WITH BOOSTER INSIDE THE TUBE.

P4- PLACE TOP SUPPORT, 9332149 ON FUZES.

P5- PLACE DESICCANT ON TOP OF CENTER PORTION OF TOP SUPPORT WITH LENGTH OF BAG WIDTHWISE OF SUPPORT. (SEE NOTE 2).

P6- BOTTOM FILLERS, IF REQUIRED, SHALL BE ADDED ON BOTTOM OF BOX ON EACH SIDE OF BOX INDENTATION TO INSURE TIGHT PACKING.

P7- CLOSE AND SEAL CONTAINER. THE CONTAINER SHALL WITHSTAND AN AIR LEAKAGE TEST. SEE SHEET 1 OF 4 OF THIS DRAWING FOR TEST REQUIREMENTS

NOTES
1. SPEC MIL-A-2550 APPLIES
2. SEE NOTE TAT ON SHEET 1

FIGURE 19

		MECHANICAL PROPERTIES	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE	ORIGINAL DATE OF DRAWING 78-10-5 - 1	PART NO. 8364492
		YP	TOLERANCES ON DECIM. ±	DRAWN	CHECKED
		TS	FRACTIONS ± ANGLES ±	DATE	DATE
8364213	BOX METAL	ELT	MATERIAL	ENGR	DATE
NEXT ASSY	USED ON	RA		Bldg 12	DATE
APPLICATION		BH	HEAT TREATMENT		
DO NOT	APPLY PART NO.	BH	FINAL PROTECTIVE FINISH		

U S ARMY ARMAMENT RESEARCH AND DEVELOPMENT COMMAND
DOVER, NEW JERSEY 07801

BOX, AMMO, METAL, FOR ARTILLERY TYPE AND ROCKET FUZES

SIZE D | CODE IDENT NO 19200 | 8364492

SCALE 1/1 | SHEET 4 OF 4

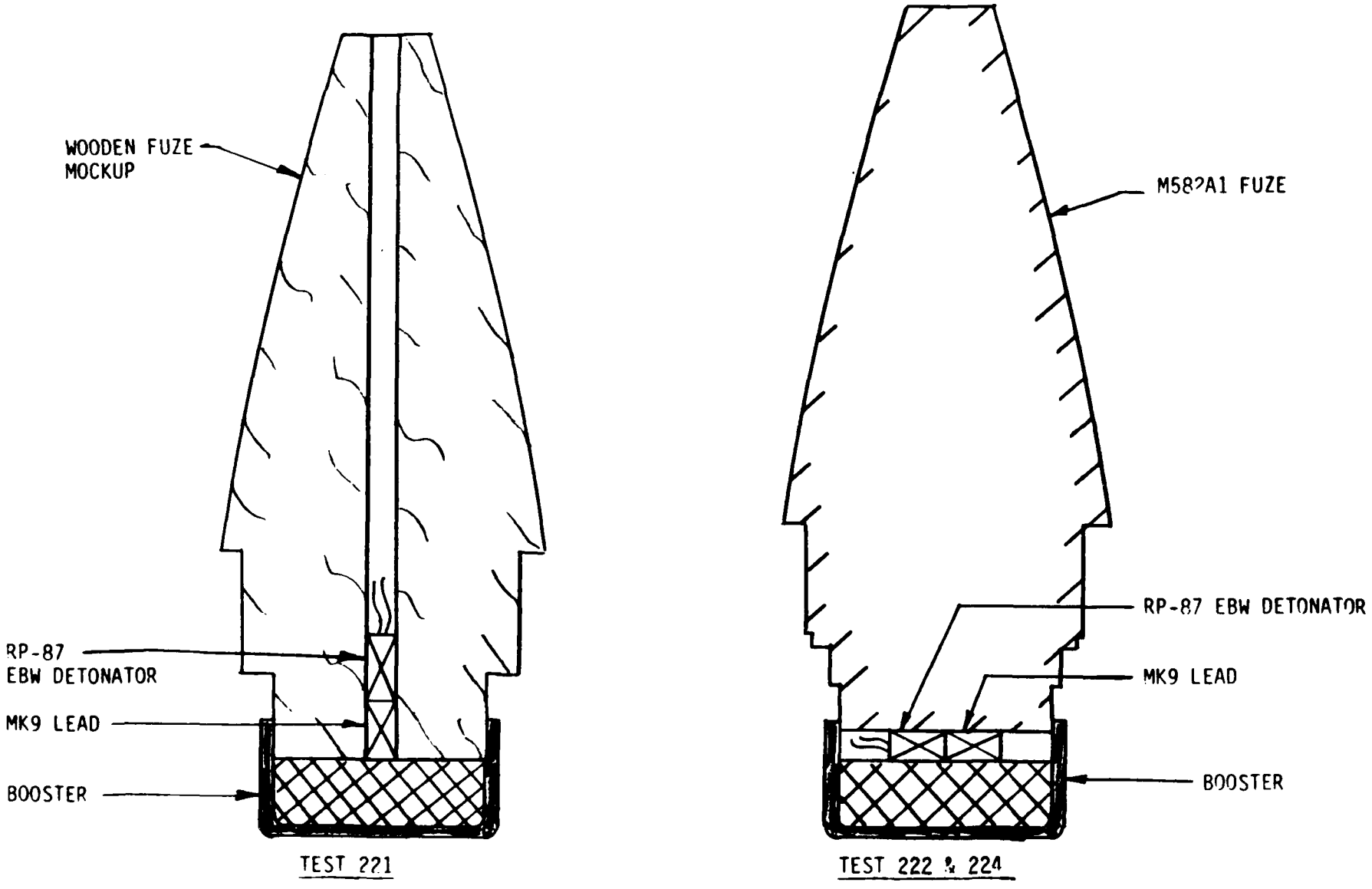


FIGURE 20- INITIATION METHOD SINGLE TACK TESTS

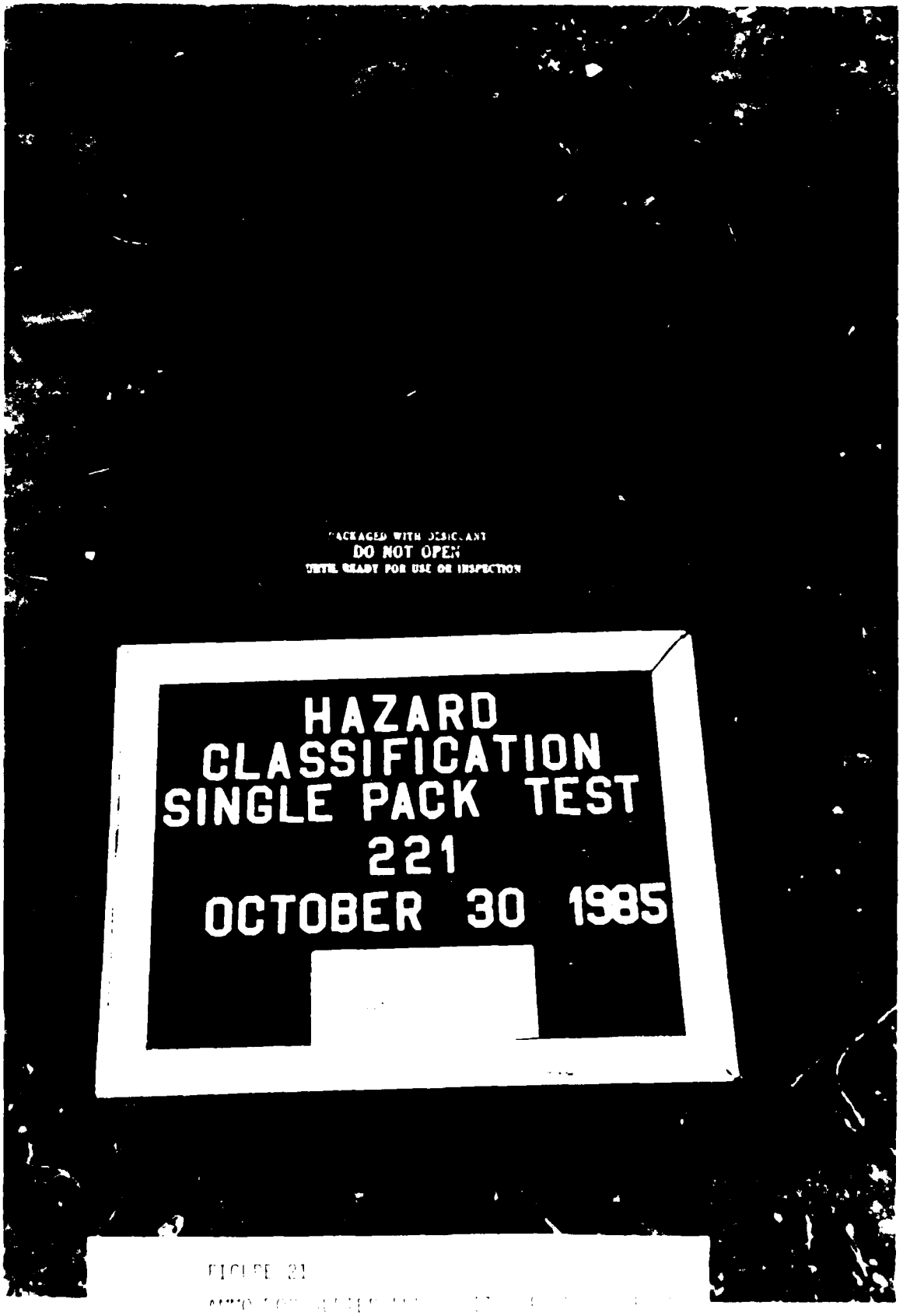

PACKAGED WITH DESICCANT
DO NOT OPEN
UNTIL READY FOR USE OR INSPECTION
HAZARD
CLASSIFICATION
SINGLE PACK TEST
221
OCTOBER 30 1985

FIGURE 21

FIGURE 22

STEEL PLATE AND SAND JACK [illegible]

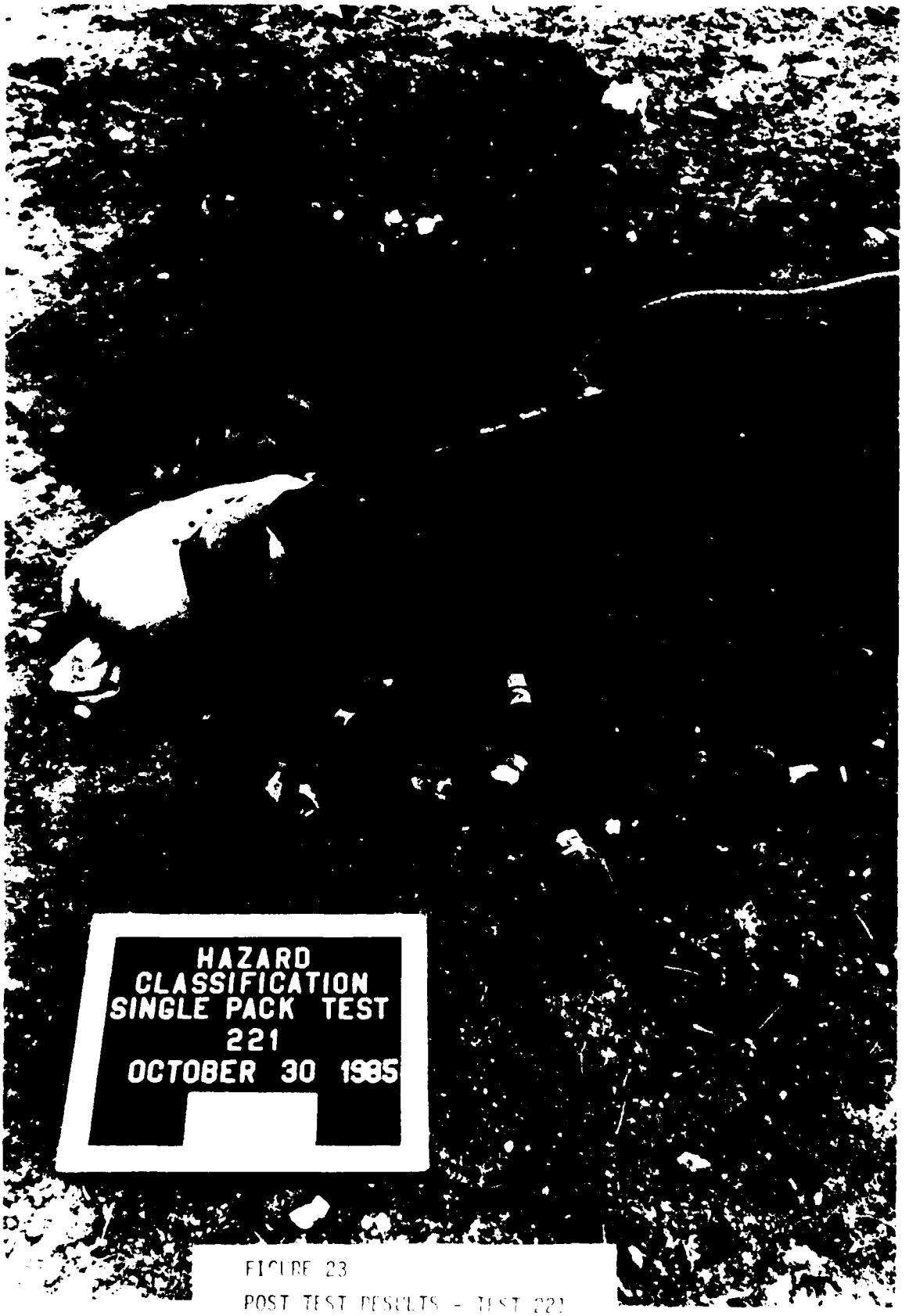


FIGURE 23
POST TEST RESULTS - TEST 221

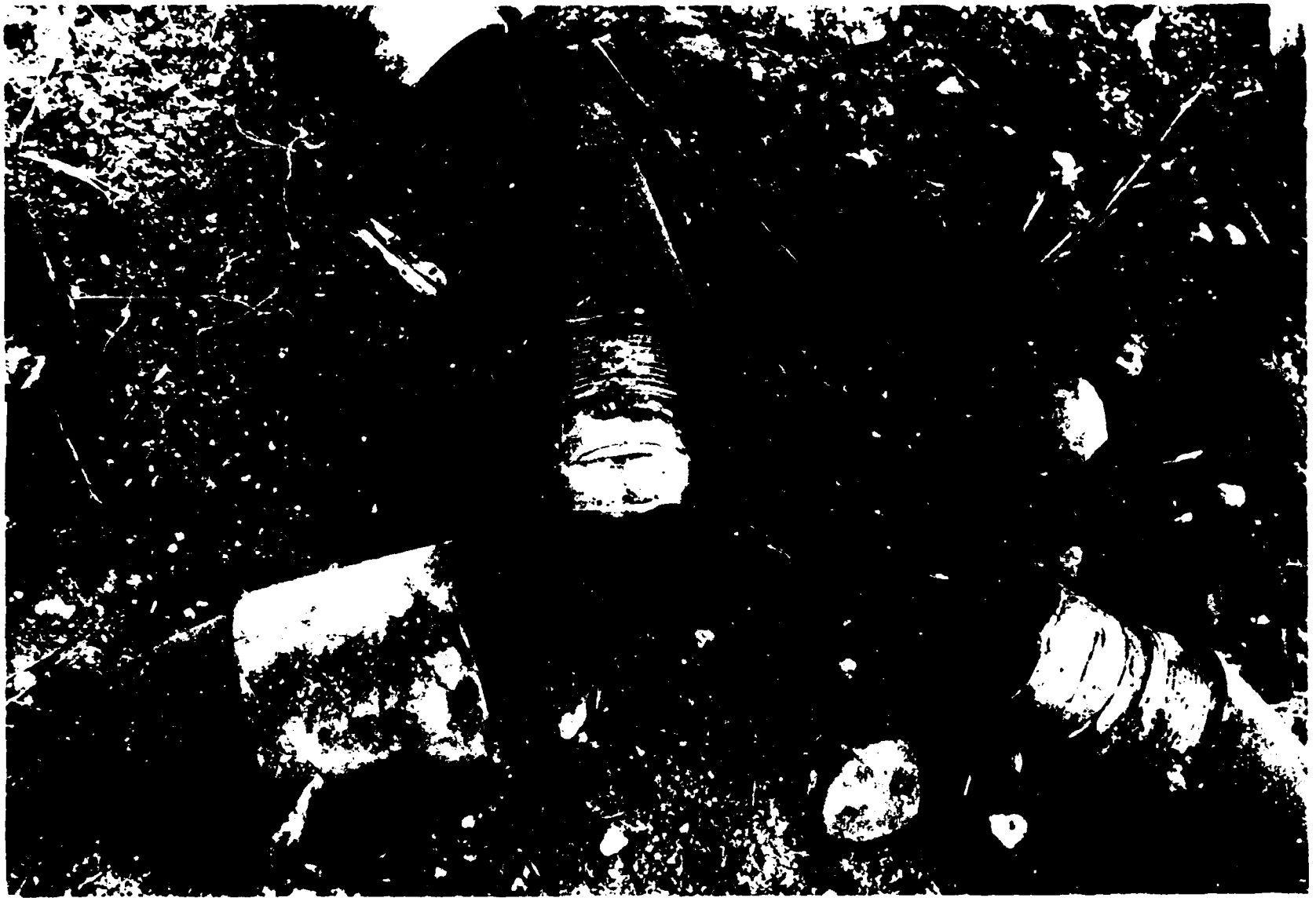


FIGURE 24
CRUSHING OF BOOSTERS - TEST 221

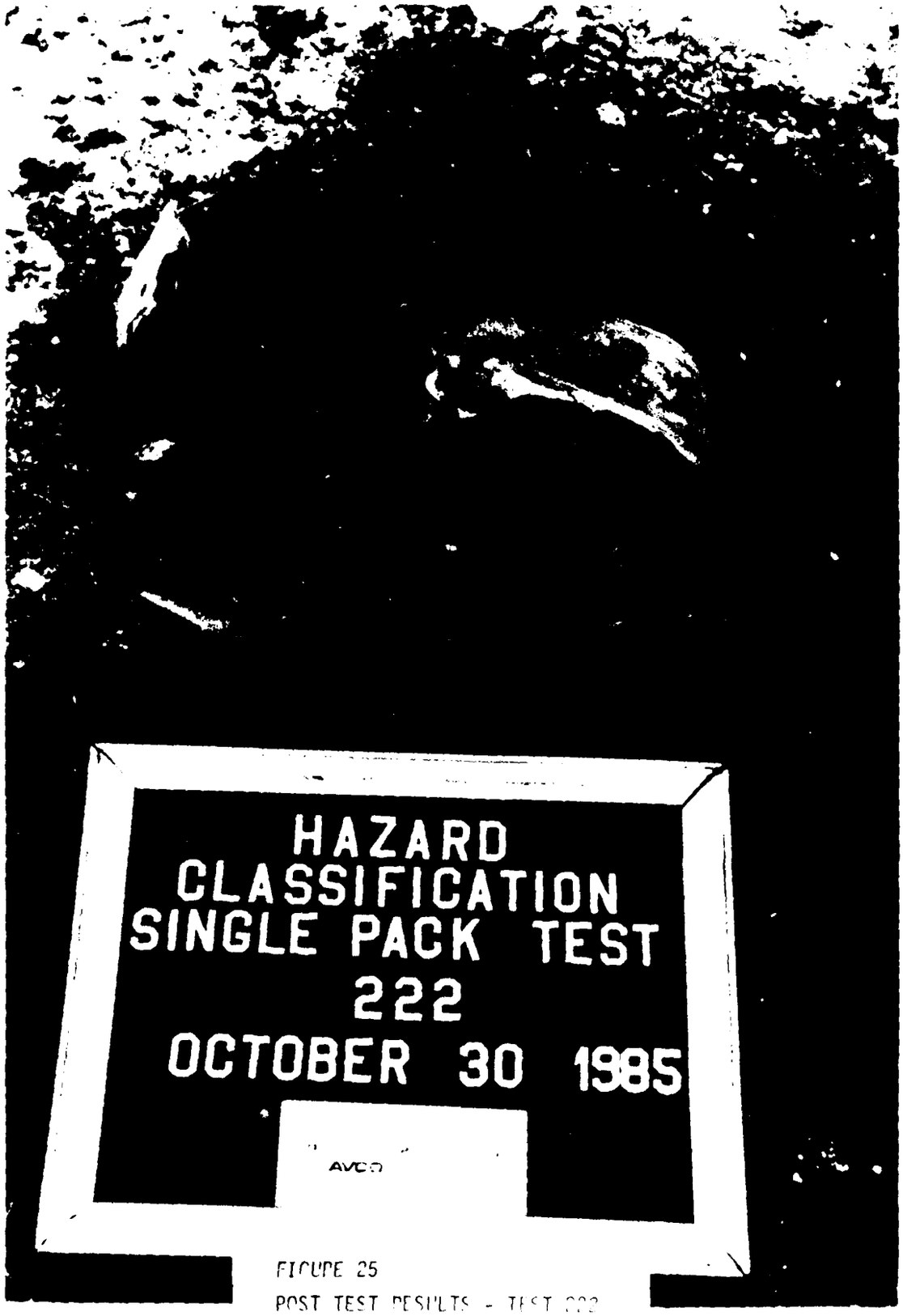


FIGURE 25
POST TEST RESULTS - TEST 222

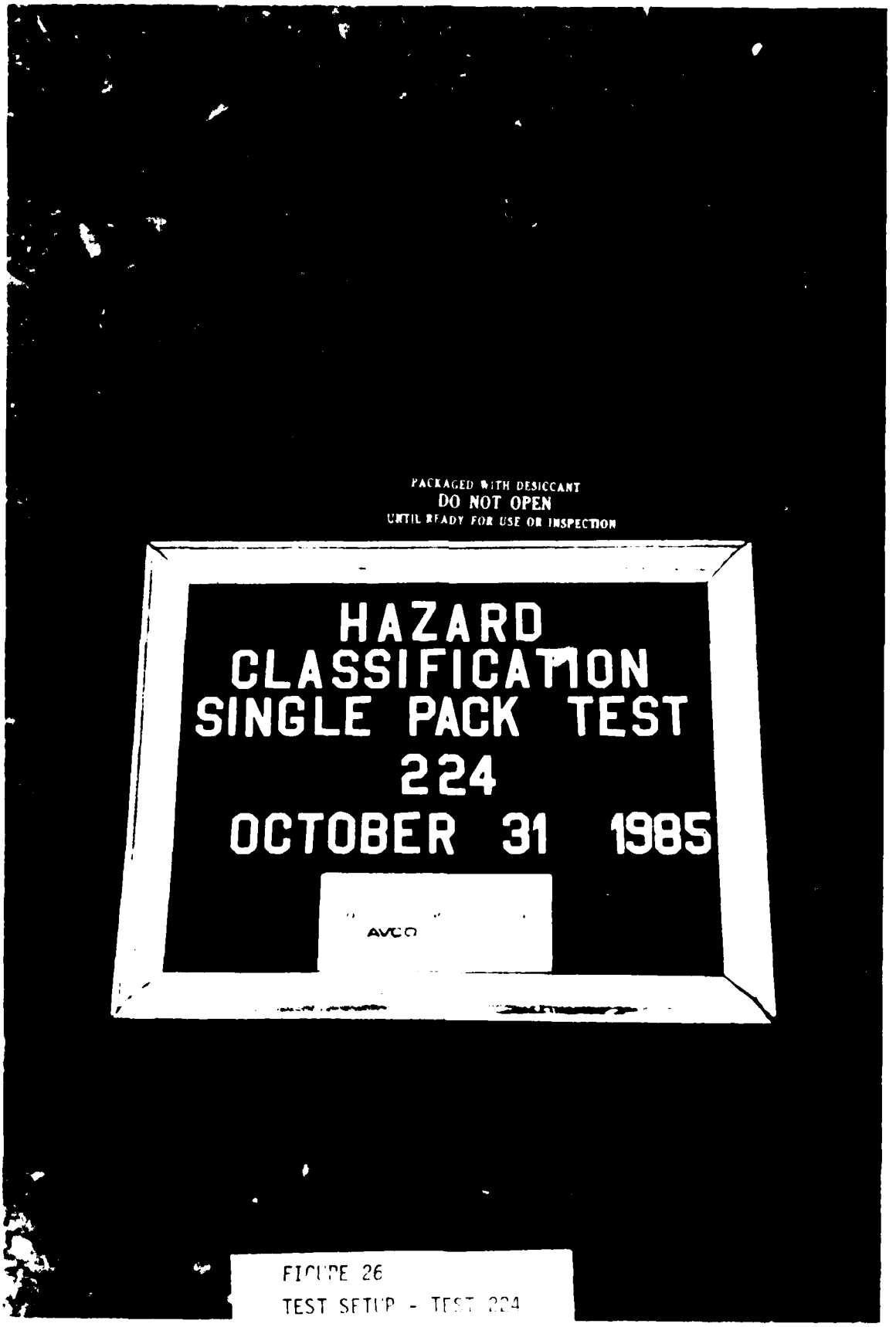


FIGURE 26
TEST SETUP - TEST 224

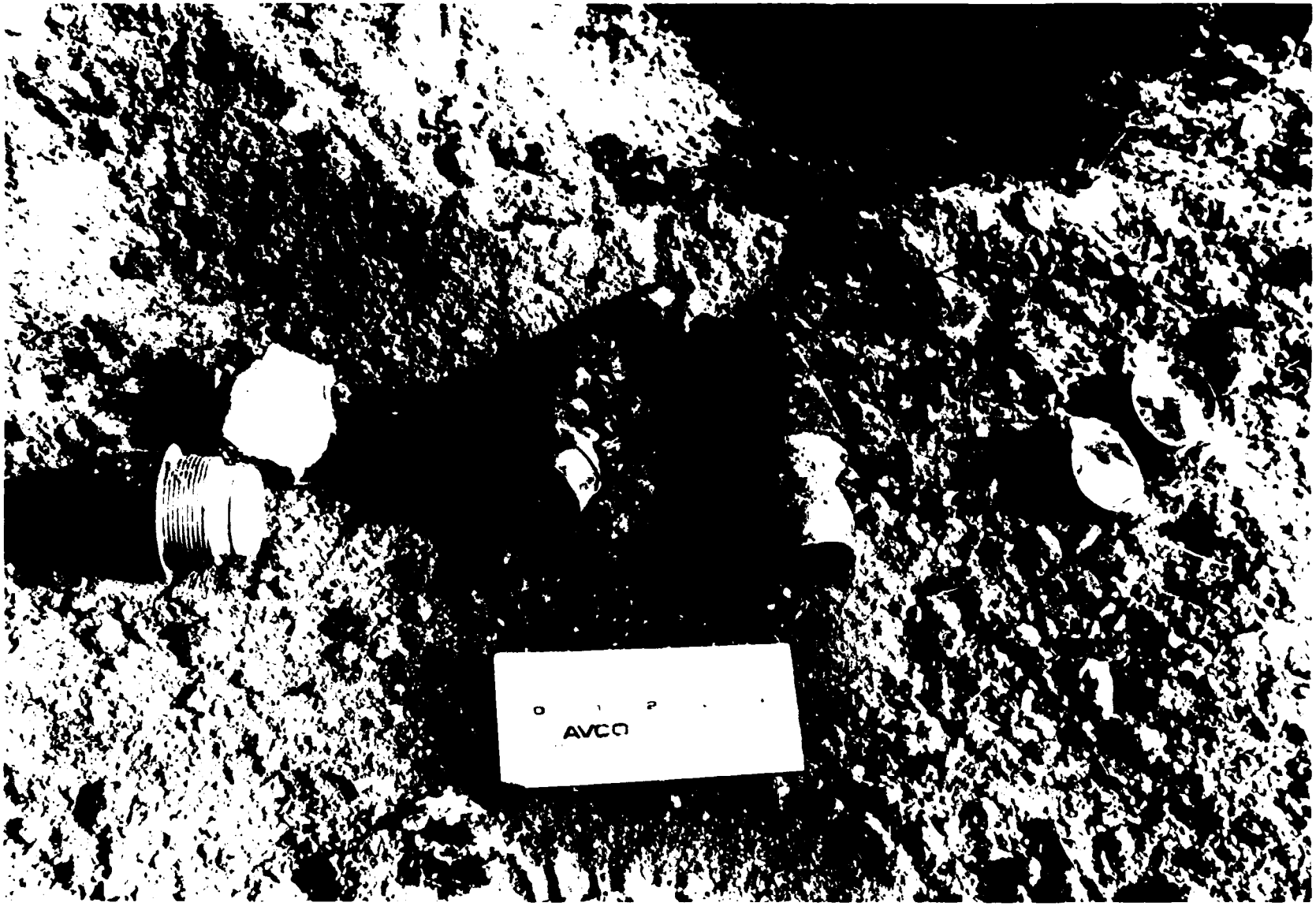


FIGURE 27

POST TEST RESULTS - TEST 224

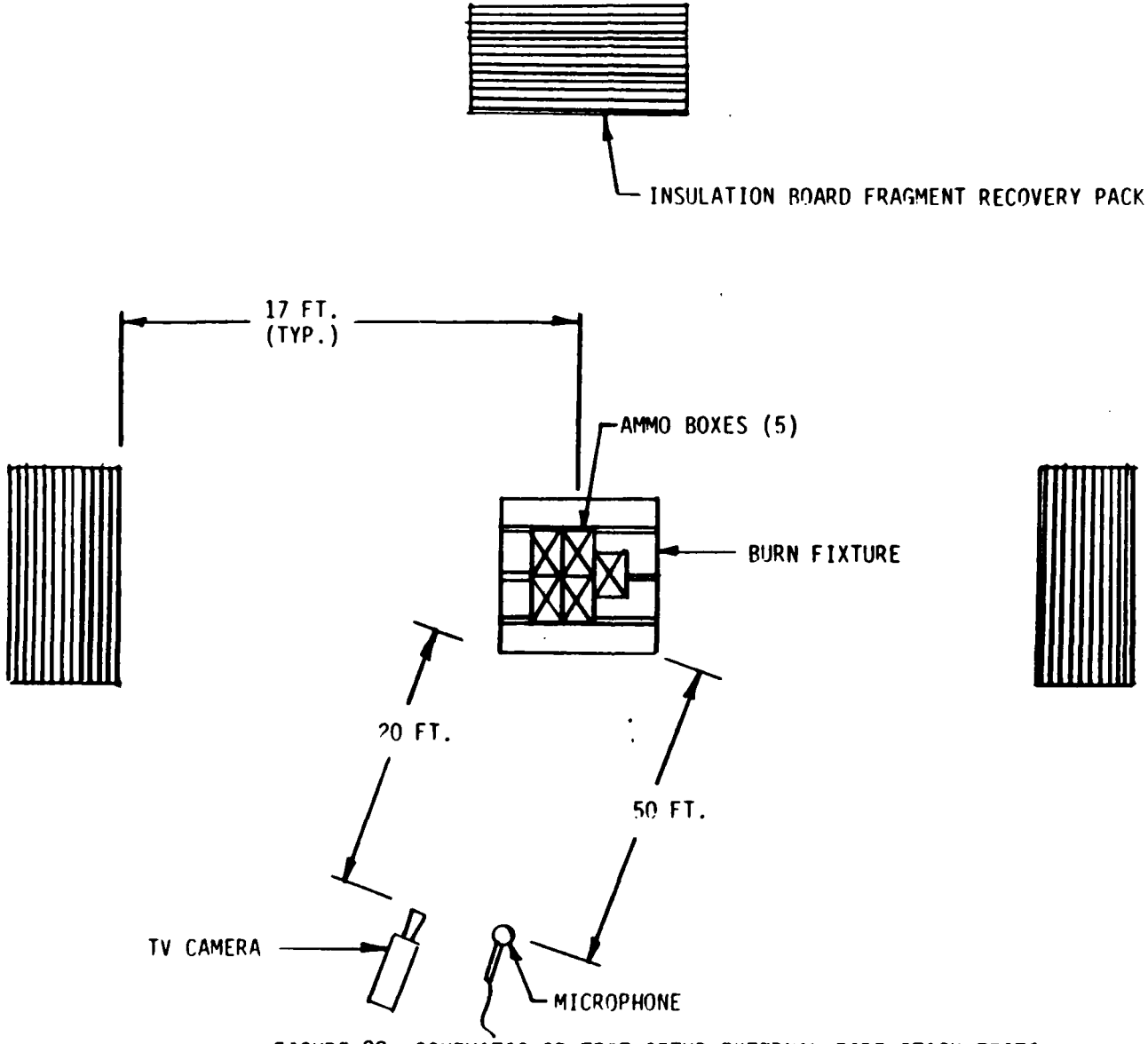


FIGURE 28 -SCHEMATIC OF TEST SETUP, EXTERNAL FIRE STACK TESTS

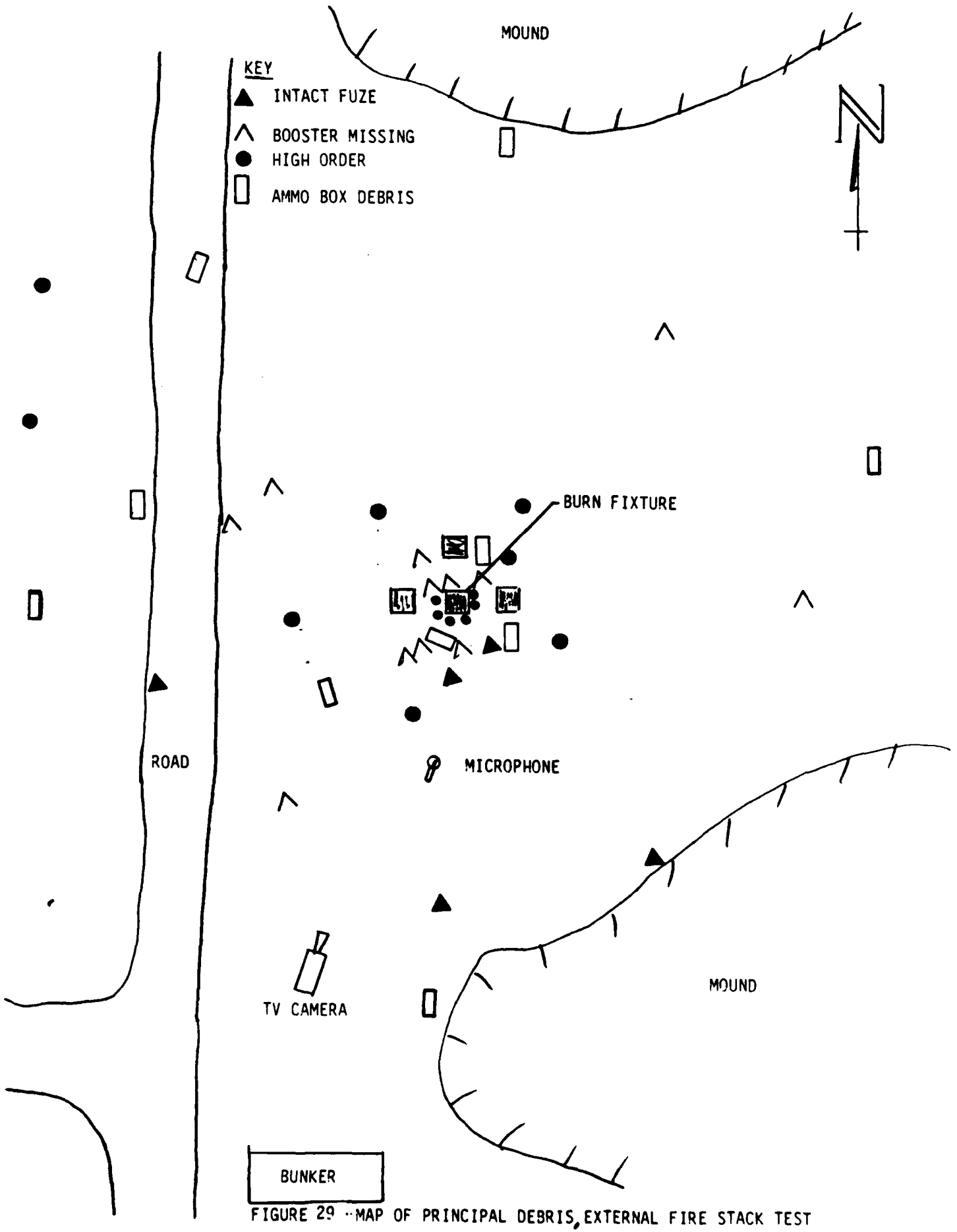


FIGURE 29 - MAP OF PRINCIPAL DEBRIS, EXTERNAL FIRE STACK TEST

FIGURE 30

AMMO BOXES SET UP ON BURN FIXTURE

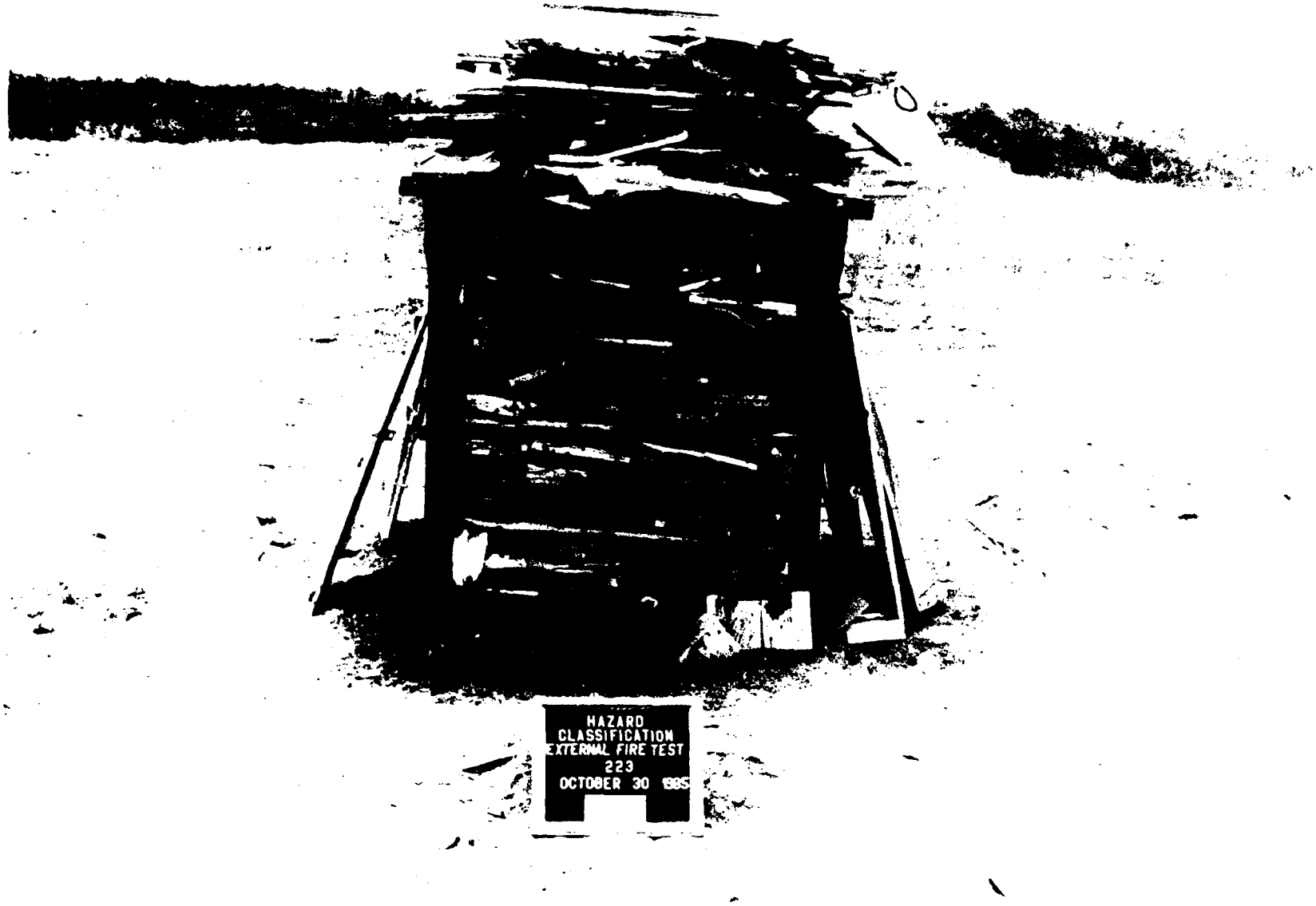


FIGURE 31

BURN FIXTURE WITH KINDLING WOOD IN PLACE

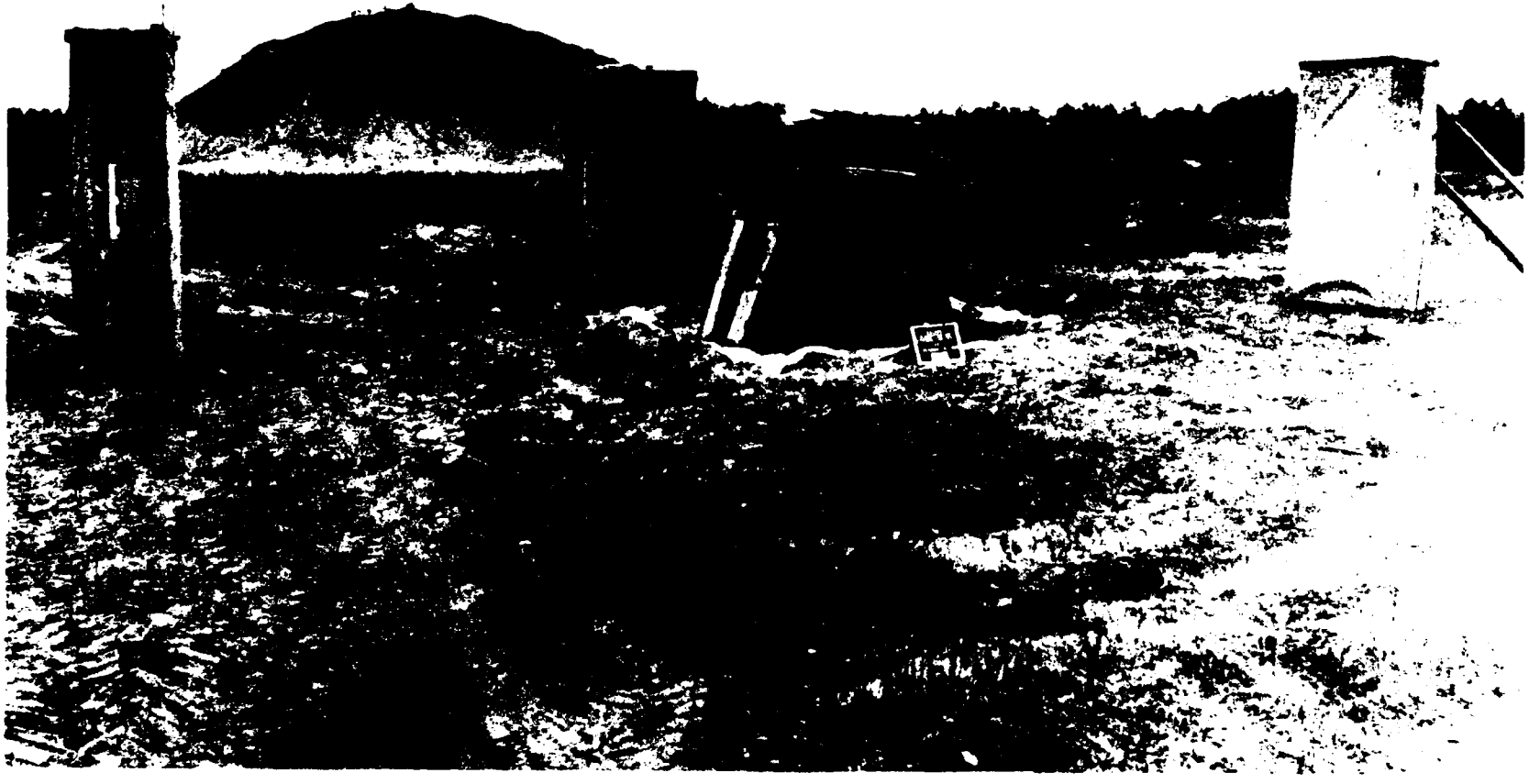


FIGURE 32

BURN FIXTURE AND FRAGMENT RECOVERY PACKS

FIGURE 23

GENERAL VIEW OF TEST AREA FOLLOWING CONDUCT OF FIRE STACK TEST

FIGURE 34

FUZE AND KINDLING DEBRIS IN BURN PIT

FIGURE 35
FUZE AND KINDLING DEBRIS IN BURN PIT

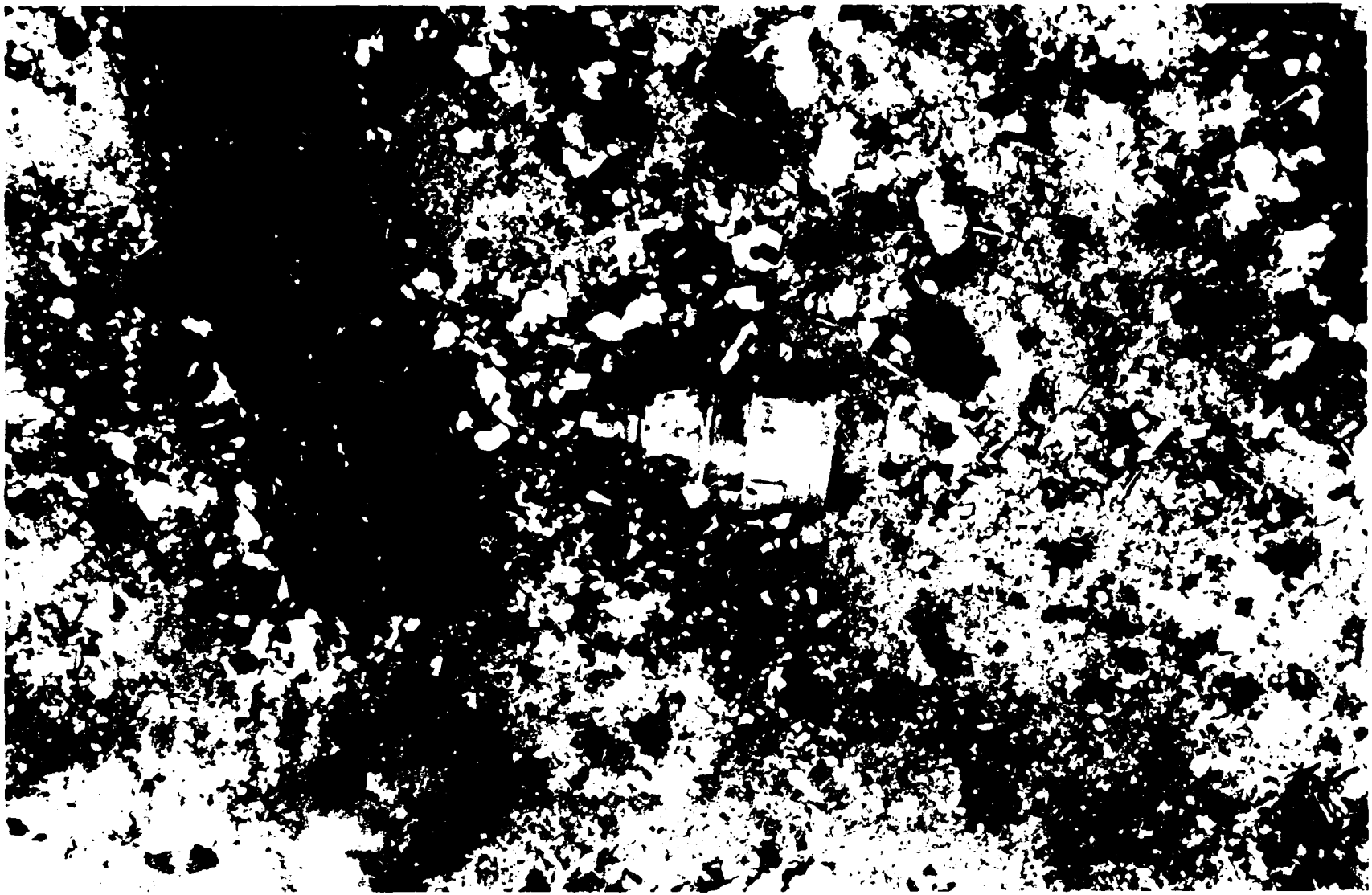


FIGURE 30

EJECTED FUZE - TEST 223

FIGURE 37

EJECTED FUZE - TEST 223

Commander
Armament Research and Development Center
U.S. Army Armament, Munitions and Chemical Command
ATTN: SMCAR-MSI (5) (Bldg 59)
SMCAR - SSS(5) (Bldg 319)

Dover, NJ 07801-5001

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U.S. Army Armament, Munitions and Chemical Command
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Dover, NJ 07801-5001

Administrator
Defense Technical Information Center
ATTN: Accessions Division (12)
Cameron Station
Alexandria, VA 22304-6145

Director
U.S. Army Material Systems Analysis Activity
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Aberdeen Proving Ground, MD 21005-5066

Commander
Chemical Research and Development Center
U.S. Army Armament, Munitions and Chemical Command
ATTN: SMCCR-SPS-IL
Aberdeen Proving Ground, MD 21010-5423

Commander
Chemical Research and Development Center
U.S. Army Armament, Munitions and Chemical Command
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Aberdeen Proving Ground, MD 21010-5423

Director
Ballistic Research Laboratory
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U.S. Army Armament, Munitions and Chemical Command
ATTN: SMCAR-ESP-L
Rock Island, IL 61299-6000

Director
U.S. Army TRADOC Systems Analysis Activity
ATTN: ATAA-SL
White Sands Missile Range, NM 88002